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Summer tech

50 Product Reviews

Amps, Consoles, DAWs, Headphones, Metering, Microphones, Monitors, PA, Plug-Ins, In The Rack, Recorders.

Special Supplement

Microphones

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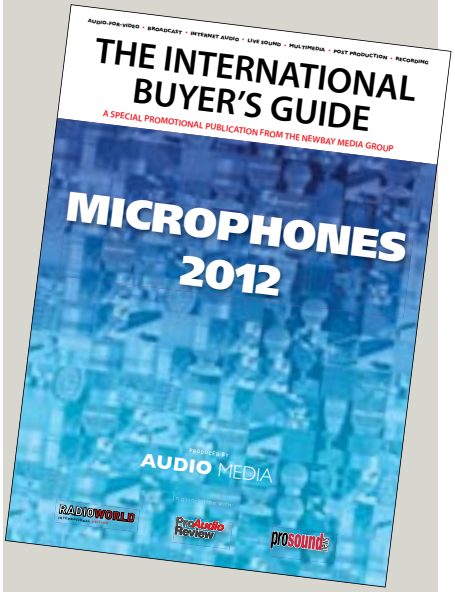
Special Supplement

Microphones



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by HARMAN

leader

I can remember some kit that should never have made it out of the R&D department (or the shed). Indeed, some things should never have made it out of people's heads. I've had gear fill my studio with smoke after performing one test the manufacturers seemingly forgot to do (turning it on). I visited one brainstorm at his house who kept the living room curtains closed in case of corporate spies, and only consented to show me his invention (in the kitchen) after extensive questioning. It really wasn't worth the wait. Several people have sent stuff in the post that could generously be described as 'home-made', but could be equally well described as 'dangerous'. Ah... good times.

Now with a spectacular canon of technology already on the market, fierce competition, and required investment, some of that has gone. Yes, programming languages are the bread board of this age and innovation continues, but an iPhone app is far less likely to spontaneously combust, which is less fun.

The main point is that there seems to be far fewer bits of bad kit than there used to be. It's probably inevitable. Knowledge has accumulated, more competition means the benchmarks are higher, you don't have to create a new board to add a new function – you just write a new class.

So what is the reviewer left with? At our end of the industry, it's more about identifying the user, the market, the niche, the budget, and the discipline than it is about taking a half a star off because it's got a wall-wart power supply. It's about digesting information on your behalf and spitting out the unnecessary bits before we pass it on. It's about providing a service for those who've got better things to do than fill their days trying to get a manufacturer to answer that age-old question: "Why?" But it's also about doing it with integrity, and definitely not anonymously.

As is usual in August, *Audio Media* is a little unusual. This time we've collected together 50 *AM* reviews from the past year or so, then cut them down to the basic information and a representative quote from the review to form a kind of year-in-gear miscellany. It's been interesting looking over the kit, and nice to see that innovation is still going on, even though I sometimes think that we know too much already... Anyway, I hope you find this useful.

If you're in the market for a summer review summary with 50 featured products as well as the usual news and regular features, then you should definitely consider putting Audio Media August 2012 on your short list to try out before you buy it. Even though it's free.

Paul Mac, Editor

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AUDIOMEDIA

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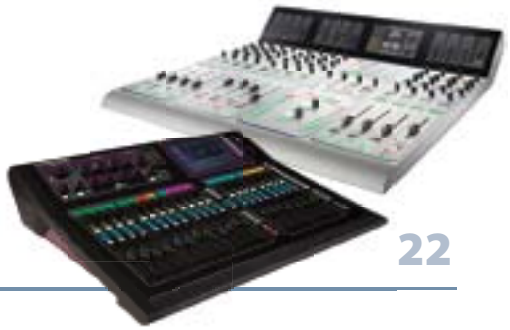

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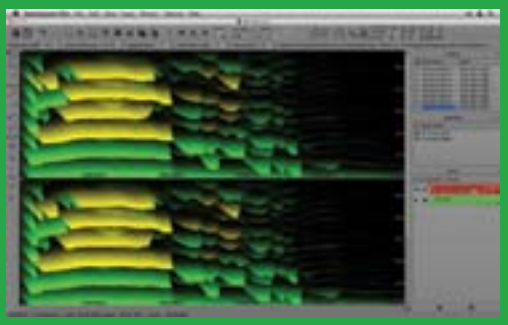
PRODUCER FORM

The Eligible Studio Producer Form has been launched by PPL, following discussions with several industry organisations including MPG, FAC, MMF, Equity, and MU. The form means that all parties can agree at the point of recording what contributions have been made on a track – offering a practical solution for studio producers to make royalty claims. "The MPG has been working very closely with PPL to formulate a method by which studio music producers can confidently and properly claim for their share of all the income streams deriving from the public performance of the sound recordings that they produce and contribute to," said Steve Levine, Chairman of the MPG.
www.ppluk.com/studioproducers

NEW PRODUCT

Swiss manufacturer Schertler has added to its range of portable pre-amps with the release of the Yellow Single, a compact and cost-effective version of its flagship Yellow Blender. Yellow Single offers a single dedicated input channel – including both XLR and jack connectors – that accommodates a range of different microphones and instruments. The pre-amp's Return socket can also be used as a second input for line sources. Four balanced/unbalanced output options enable connection to active loudspeakers, mixers, recording devices or effects. The main input channel includes four-band EQ, notch filter, low pass 'warmth' filter, phase reverse, low-cut switch, and phantom power.
www.schertler.com

Sony's SpectraLayers



Sony Creative Software has released SpectraLayers, the newest addition to its line of software for audio and video production. An intelligent audio editing program, SpectraLayers operates directly on waveform spectra using a wide variety of smart editing tools. The application is available for Mac and PC, and enables users to accurately edit audio by graphically dividing files into discrete, user-defined layers, that can be processed independently and then reintegrated to achieve master files free of flaws.

"SpectraLayers introduces an innovative, unique workflow that redefines what can be accomplished in the professional audio editor's suite," said Dave Chaimson, Vice President of Global Marketing for Sony Creative Software. "The level of editing precision and advanced capabilities SpectraLayers offers makes it an essential tool for industry professionals who demand the deepest audio analysis tools."

Highlights of the program include the ability to remove unwanted noise and artefacts while leaving surrounding audio data completely intact, separate music and dialogue into individual component layers, and perform pitch correction on user-selected components of an audio file.
www.sonycreativesoftware.com

Drumdrops Keep Falling On My Head

Drum Drops.

use this one ^

Miloco Studios and Mike Pelanconi have relaunched the Drumdrops download store. Billed as the 'pre-eminent rhythmic resource for producers', Drumdrops has dedicated drum performances, stems and loops spanning dub, disco, funk and rock, among others. All tracks are played on vintage kits by professional drummers, recorded on classic console and captured on tape for an 'authentic' sound.

All Drumdrops tracks are available as fully downloadable multi-tracks. Included are hand mapped Tempo Maps that are accurate to a 1/4 or 1/8 of a beat, allowing a sequencer to follow the tempo fluctuations of the performance. MIDI data such as notes, chords, or drum machine triggers remain locked into the groove. OMF session files allow users to store and share project data across multiple applications.

The website has a new interface, with all the Drumdrops content now available to download on a track-by-track basis direct from the Drumdrops site. The Audition player allows the user to upload productions and search the library via genre or tempo.

A&H Update To HUI

Allen & Heath has released a major firmware and driver update for its GS-R24 recording console. The new firmware includes integrated support of the HUI protocol for direct integration with DAW applications with HUI MIDI control pre-sets, such as ProTools and Reaper, and a range of enhancements to the FireWire interface driver.
www.allen-heath.com

EXTENSION RELEASE

Celemony has released the ARA Audio Random Access interface extension to all software manufacturers. ARA allows for the improved integration of Melodyne and similar plug-ins into digital audio workstations. As an extension of existing plug-in interfaces such as VST or Audio Unit, ARA opens an additional channel of communication through which the DAW and plug-in are able to exchange information about the audio files.
www.celemony.com

PRODUCT UPGRADE

Blue Cat Audio has released FreqAnalyst Multi 2.0, a new version of its multiple tracks spectrum analyser. The tool enables the visualisation of the spectrum of multiple instances on a single screen in order to compare them or detect overlaps or conflicts, and has a completely redesigned user interface, a new pre-sets manager, new MIDI and automation mapping, new pre-sets, Windows AAX support, and multiple display sizes.
www.bluecataudio.com

NEW PRODUCT

Slate Digital has released the latest of its analogue modelled digital audio plug-ins, the Virtual Tape Machines, or VTM. The VTM is an RTAS, VST, AU and AAX audio plug-in that replicates the sound of two classic tape decks, a two-inch 16-track from NRG recording studios, and a 1/2-inch two-track from Howie Weinberg Mastering. The VTM adds the sonic characteristics of these machines to any DAW.
www.slatedigital.com

NEW FORMAT

Sonnox has released AAX DSP and AAX Native versions of its Oxford EQ and Inflator plug-ins. "We're delighted to be supporting the next generation of Pro Tools users with AAX and are very optimistic about the Pro Tools|HDX platform," said Sonnox Managing Director Rod Densham. "The Sonnox development team has doubled in size in recent months, and is working hard to port all our remaining plug-ins to AAX as soon as possible."
www.sonnox.com

NEW PRODUCT

iZotope has released the Food Sound Library, designed for use with Iris. Suitable for movie and game sound design, the library has a large range of samples with sounds such as chopping onions, cracking carrots and smashing tomatoes. It contains over 100 patches to inspire exploration, similar to iZotope's previous Glass and Wood sound libraries.
www.izotope.com

NEW PRODUCT

Native Instruments has released Raw Voltage, a Maschine Expansion that captures the sound of a huge modular synthesizer system. Raw Voltage is based on a unique custom modular system used and created by Norwegian synthesis expert Roger Grønberg. The kits, instruments, and patterns are designed to share the sound characteristics of analogue synthesis.
www.native-instruments.com

NEW PRODUCT

Ableton, in conjunction with Sample Logic, has released Electrix – a collection of unique, newly-created instruments derived from real-world acoustic sample material, synthesis, and physical modelling. The toolkit combines animated atmospheres, morphed instruments, and electrified percussion with fresh varieties of leads, basses, and tempo-synched audio loops. Electrix is sorted into five sections containing 311 instruments and 75 audio loops.
www.ableton.com

Soundcraft and Studer Go To The Ball

Soundcraft and Studer's Italian distributor, Leading Technologies, along with sister company Sound Light & Technologies, recently participated in a large scale recording project with RAI Radio, using a combination of Soundcraft and Studer digital mixing platforms. The vast production of Rossini's La Cenerentola (Cinderella), which involved around 250 members of cast and technical crew, was mixed on a combination of three Studer Vista 9 and Vista 5 consoles, with three further Soundcraft V1 desks providing backup. These were used in four different locations: while the actors, singers and choir were variously located in Parco della Mandra in Venaria, Palazzina di Caccia and Palazzo Reale in Torino, the orchestra was recorded remotely at the Auditorium RAI in Torino. All locations were linked by fibre or radio bridge to give the actors the sense of performing in real time with the orchestra, and a Studer stagebox was positioned in each venue.

A multi-track recorder received the audio via a MADI port on the Vista 9. The orchestra required 68 microphones channels on the desks, with a further 12 channels for the choir.
www.harman.com

Waves Goes Into Forensic Detail

Covert Audio Specialist Phil Manchester has been using Waves Audio plug-ins for his work restoring audio for high profile investigations. Manchester has been instrumental in securing vital evidence required in a recent groundbreaking US to UK extradition case in which the audio forensic evidence was crucial in securing the extradition. His audio forensics work has also been used on several recent high-profile terrorist conspiracy cases in the UK.

"Waves plug-ins are my primary palette of tools," commented Manchester. "Coming for a background using Waves plug-ins for music and mix-engineering, I took that passion and applied it to my professional life in audio forensics. Waves processing provides the tools to do the job every time. In forensics, the quality of the material is often so poor that we really need to go the extra mile to be able to provide critical intelligence and evidence, and I have been proud to be able to restore recordings, with the help of Waves, that others could not."
www.waves.com

PRODUCT INSTALL

Magne Furuholmen, one of Scandinavia's most successful musicians and founder member of A-ha, has invested in his third NTP DAD AX24 audio signal processor. He is founder of, and performer in, collective Apparatjik, together with Guy Berryman of Coldplay and Jonas Bjerre of Danish band Mew. "We bought our first DAD AX24 systems in summer 2011 for recording and post-production in our Oslo studio," said Furuholmen. "The third AX24 is being used for recording live stage performances on location. It is configured with eight high-specification mic pre-amps, which make the system ideal for capturing a wide dynamic range. In my book, it is the best solution around today."
www.ntp.dk

PRODUCT INSTALL

Castlesound Studios, a Scottish studio specialising in the recording of acoustic music for artists of all genres, as well as film, TV, radio, and advertising clients, has installed a Solid State Logic AWS 948 Hybrid Console/Controller. The new console was recently used to complete music tracks featuring Gaelic singer Julie Fowlis for the soundtrack for the new Pixar feature Brave. Replacing an original AWS 900, the AWS 948 provides Castlesound with an expanded channel count and new features to adequately handle larger productions.
www.solid-state-logic.com

PRODUCT UPGRADE

TC Electronic has added new Live and OB Tools to System 6000 MKII. The new Live Aid Licence for System 6000 MKII opens up two loudness processing algorithms and new presets. The ALC6 algorithm offers BS.1770 compliant loudness correction and true-peak limiting for mono, stereo, and 5.1 programmes. It only adjusts when needed. The DMix trickle-down processing algorithm converts a 5.1 programme to a mobile platform stereo version in a one-step process. Three new ALC6 and DMix preset banks targeted to ATSC A/85, EBU R128, ITU-R BS.1770-2 and TR-B32 requirements are included with the new Licence.
www.tcelectronic.com

NEW PRODUCT

Zeehi has announced its CueCast Digital Mixing Console User File Conversion Service, which provides users with the ability to convert show files that contain user settings between different digital audio mixing console formats. The initial release of CueCast converts the most commonly used features and functions stored in show files, including bussing, sub-group assigns, control group assigns, routing, labelling, mutes and mute groups, EQ and dynamic in/out settings, aux. send on/off/ and assigns, and effects and matrix on/off and assigns.
www.cuecast.com

Wohler Adds Sound To Olympic Vision

HHB Communications has supplied OB provider NEP Visions with 26 Wohler AMP1-16-M audio monitoring units (AMU) for high profile sporting events this summer, including the London 2012 Olympics and the Wimbledon Tennis Championships.

The AMP1-16-M AMUs were initially used in flyaway systems at Wimbledon to broadcast matches for ESPN in America, before being installed into two triple expander HD OB vehicles to cover the London 2012 Olympics for US broadcaster NBC. After this they will move on to Sky's coverage of the next season's Premier League football.

The AMUs allow NEP Visions engineers to select, monitor, and meter up to 16 channels of embedded audio from either of two 3G/HD/SD-SDI streams. "Operationally, the AMP1-16-M is very easy to use and the SDI inputs help us reduce the cabling that we would normally need for monitoring 16 channels of audio," said Paul Fournier, NEP Visions Head of Sound.
www.hhb.co.uk

Sennheiser Helps In Search For Superstar

Andrew Lloyd Webber's latest television talent contest has been a search for the lead role in a UK tour of *Jesus Christ Superstar*. Sennheiser 8000 Series wired microphones were used exclusively throughout the recording of the auditions. "I needed to choose something that would show off their talent but would be physically discreet," said Richard Meredith, Location Sound Supervisor on Superstar.

The MKH 8060 was also used for camera top microphone and wireless booms issued to the PD crews. "With this type of programme, a large proportion of the reality and backstage audio is filmed by PDs with no sound recordist," commented Meredith. "We ran the wireless booms with SKP 2000 plug on transmitters and the whole set-up worked a treat."
www.sennheiser.co.uk

NEW PRODUCT

Nugen Audio has released Loudness Management Batch (LMB) version 1.4. Based on Nugen Audio's loudness monitoring and correction engine, LMB operates faster then real time on batches of files to save time and prevent human error. LMB can automatically de-mix video to analyse the audio content without changing the original file. LMB's Watched Folders automate the processing of files, and optional command-line operation allows for full integration into existing asset management systems and procedures.
www.nugenaudio.com

BROADCAST DEALER

HHB Communications has been appointed by UK manufacturer DiGiCo as its broadcast dealer in the UK and Ireland. "HHB is a highly-respected company in the professional broadcast audio market and a trusted source of expertise who will properly represent our range of consoles to the UK's biggest broadcasters," said DiGiCo MD James Gordon. "We are very much looking forward to showing their clients how flexible and feature packed our consoles are."
www.hhb.co.uk

What do you fancy for Lunch?

The Classic

The Neve 1073LB – the world's most famous, most desirable preamp – in 500-series format

Sheer class, lovingly recreated from the original Neve 1073 drawings, with exclusive hand-wound transformers from Neve's original supplier

The Gourmet Classic

The Neve 1073LBEQ – the 1073's EQ section, joining up with the preamp

As a standalone, the Neve 1073LBEQ is fabulous. For a gourmet experience, Neve's Audio Processing Insert technology puts it within the 1073LB's signal path, just like a traditional Neve 1073

The Special

The Neve 2264ALB – add Neve's classic limiter/compressor for a true Neve classic signal path

On its own it's an amazing recreation of the original 2264A. Married to the 1073LB and 1073LBEQ it's an authentic Neve channel strip in 500-series format

See our full menu at www.ams-neve.com

Neve
Crafted in England by Neve engineers

NEW PRODUCT

Triveni Digital has launched the StreamScope RM-40 CALM, a DTV loudness monitor that remotely monitors, measures, records and analyses DTV streams in real time to ensure their compliance with the US government's Commercial Advertisement Loudness Mitigation (CALM) Act.

The 1-RU device measures multiple transport streams and services at any TV station, cable headend, or network node location. Station engineers can review loudness levels and dial-norm for all audio streams, as well as setting loudness thresholds to trigger alerts. StreamScope RM-40 CALM delivers a daily report that accurately identifies possible CALM violations for all services on a given transport.

www.TriveniDigital.com

PRODUCT INSTALL

Far East Broadcasting Company (FEBC), an international radio network broadcasting Christian programming in 130 languages, has chosen Axia Audio consoles and routing systems to power new studios for their flagship station, HLKX-FM 106.9 in Seoul, South Korea.

Axia equipment installed includes a 16-position Axia Element broadcast console with StudioEngine mixing engine, Axia Audio Node AoIP interfaces, plus other IP-Audio routing equipment. "Not only did the Axia Element comply with the strict demands of our budget," commented HLKX's Station Establishment Director, Dr Ihn-Kiel Chang, "but at this point, we envision it as a modern tool we can use to help our organisation in our important mission."

www.AxiaAudio.com

PRODUCT INSTALL

Jünger Audio has recently sold four of its T*AP Television Audio Processor units to France's CMC Laboratories. Part of the MonalSystem group, CMC is one of the leading facilities houses servicing the French broadcast industry, with clients including all the main French TV broadcasters as well as international distributors. Three T*APs

were bought for the CMC video laboratories and one for the audio mixing operation. "We tested all of the products available on the market before choosing the T*AP, and this made us realise that realtime loudness normalisation is not an easy thing," said Jean-François Brion, Assistant to the Operating Manager and Sound Engineer at CMC.

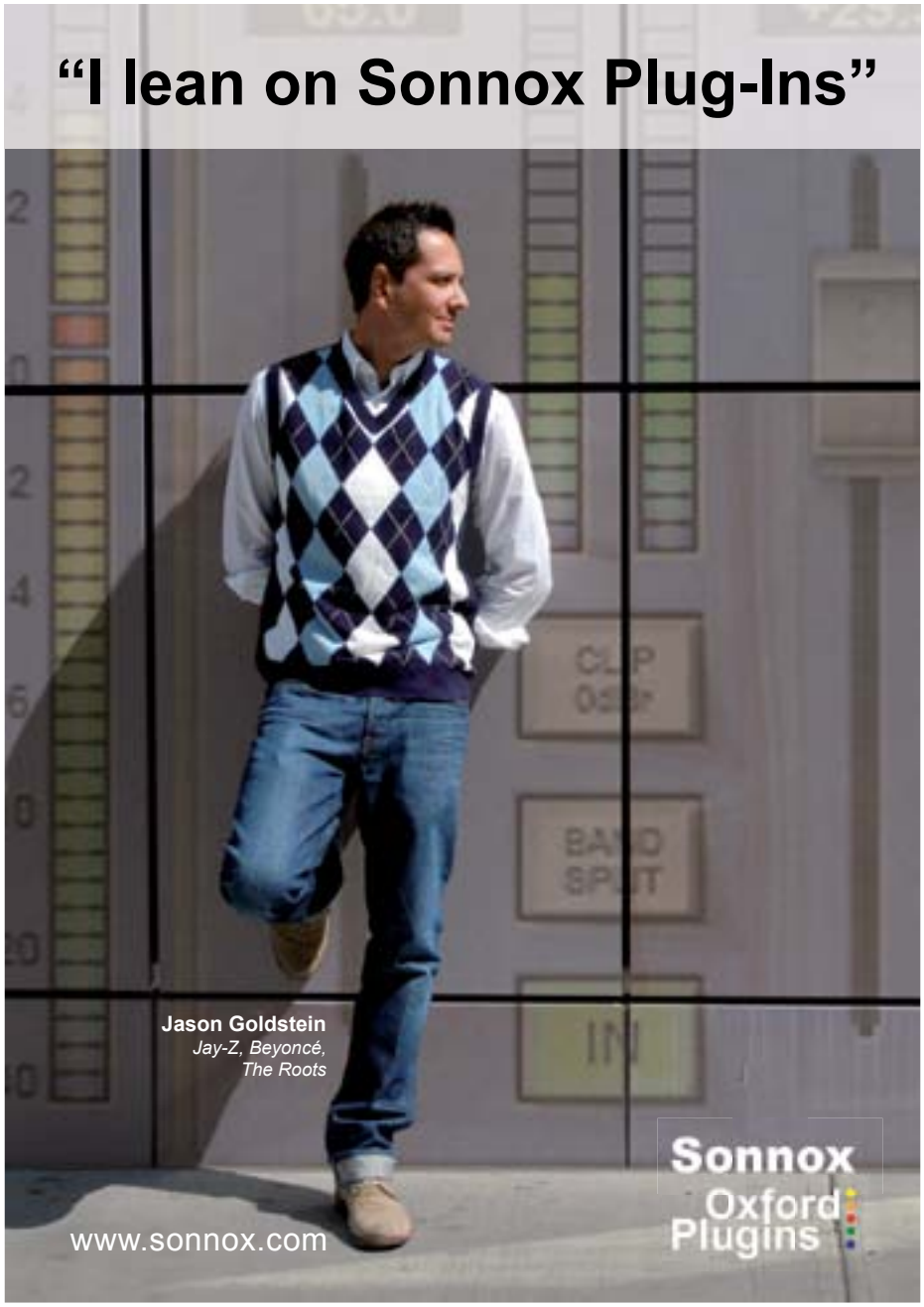
www.junger-audio.com

A Grimm View

Grimm Audio has launched LevelView and LevelViewS, two real time loudness meters. LevelView is based on the Bendy Meter concept from BBC Research. It gives the user continuous insight into recent loudness levels of the programme material. All EBU and ATSC loudness descriptors are displayed and LevelView shows a histogram of the measured loudness distribution. The RTAS/AU/VST plug-in automatically follows the DAW's transport movements. The package also offers a standalone version of LevelView that directly monitors sound card inputs. A master/slave function allows monitoring of another LevelView via a LAN or WAN network. Using this option, a plug-in can be monitored on a separate dedicated meter screen or a central measurement can be checked from several position, including via the internet.

LevelViewS is a plug-in that is aimed at producers of short programme material, such as commercials, and gives a clear view of the most important loudness parameters: the integrated, short term, and momentary loudness levels.

www.grimmaudio.com



NEW FACE AT SOHO SQUARE

Soho Square Studios has appointed former Prime Focus Commercials Executive Paul Willey to the role of Business Development and Co-production Manager. Commenting on the appointment, CEO and Founder Kim Goody said: "Paul is joining at a very important time for the studio. Our work has increased significantly over the past year and we have a strong new business pipeline. Paul will be a wonderful addition to a talented and hard working team, and we are delighted he is joining Soho Square Studios."
www.sohosquarestudios.com

SNAKE ON A PRISM

Audio Post and FOH Engineer Snake Newton has set up a comprehensive mix facility at home with full surround to handle the live post production work that he is involved with. As part of his set-up he has purchased a Prism Sound Orpheus FireWire multi-track audio interface. "It was like having an acoustic veil lifted," said Newton. "The Orpheus was revealing detail that needed uncovering and working on. Basically it raised my game."
www.prismsound.com

ERICSSON GETS TECHNICOLOR

Ericsson has announced its acquisition of the Broadcast Services Division of Technicolor, which includes sound post production, for €19 million. "With this acquisition Ericsson has strengthened its position in the broadcast managed services market and reinforced our growth ambitions," said Magnus Mandersson, Executive Vice President and Head of Business Unit Global Services at Ericsson. "Managed services is one of the main focus areas for Ericsson and we will continue to invest and expand this area." Ericsson has said that it is committed to supporting existing customers.
www.ericsson.com

Dolby Acquires Rival

Dolby Laboratories has acquired IMM Sound, a Spanish rival working on next generation digital cinema sound. IMM Sound's 3D sound equipment operates in cinemas across Europe, the US, Latin America, and Asia, and at the time of purchase was the world leader in the market, with the largest number of theatres with the immersive sound system. IMM sound technology allows for a faithful reproduction of 3D soundscapes by the placement of extra loudspeakers – including in the theatre's ceiling – that completely surround the audience. Dolby's Atmos technology is similar in that it also involves immersing the audience by placing speakers around the auditorium, including the ceiling.

Dolby issued a statement, which said: "Dolby Laboratories has acquired IMM Sound, a privately held, Barcelona-based provider of digital cinema sound solutions. The acquisition supports Dolby's strategy to continue to transform the sound of entertainment with the Dolby Atmos platform. The acquisition is also the latest example of Dolby's commitment to investing in top technical talent beyond the US"

Speaking to the Hollywood Reporter, Dolby's Senior Cinema VP Doug Darrow commented, "IMM Sound was the company that had something similar to what Dolby was doing. We thought if we combine forces, it could allow for more rapid adoption." Darrow also said that the IMM Sound brand would be discontinued and IMM technology would be used to further develop Atmos. "IMM has some enhancements around reverberation and some subtle audio effects in a theatre playout system that we haven't got to yet," he said.

It is proving to be a busy time for Dolby, as Dolby Europe has moved into its new headquarters building in Soho Square, London. A major feature of the new flagship facility is a 70-seat preview theatre designed by Munro Acoustics and equipped to playback the Atmos platform. "When we first designed the room we had to allow for our new Dolby Atmos format, which, at the time was still in development, so the process involved careful planning, particularly in relation to the location of the speakers," said Hubert Henle, Senior Director of Content Services at Dolby. "The result is the most transparent room equipped for Atmos that I have heard."

The new room contains 36 JBL speakers, 26 of which are for surround purposes, 28 stereo Crown amplifiers and a Dolby Lake EQ system.
www.dolby.com
www.munro.co.uk

MEYER IN FRANCE

Digimage Cinema and Piste Rouge, two post production companies in Paris, have recently equipped their key mixing and screening rooms with EXP cinema audio systems from Meyer Sound. The EXP system at Digimage Cinema, installed in a screening room dedicated to final checking of new films in various formats, comprises Acheron Studio screen channel loudspeakers, X-800C subwoofers, HMS-10 surround loudspeakers, and a Galileo loudspeaker management system with Galileo 408 processors.

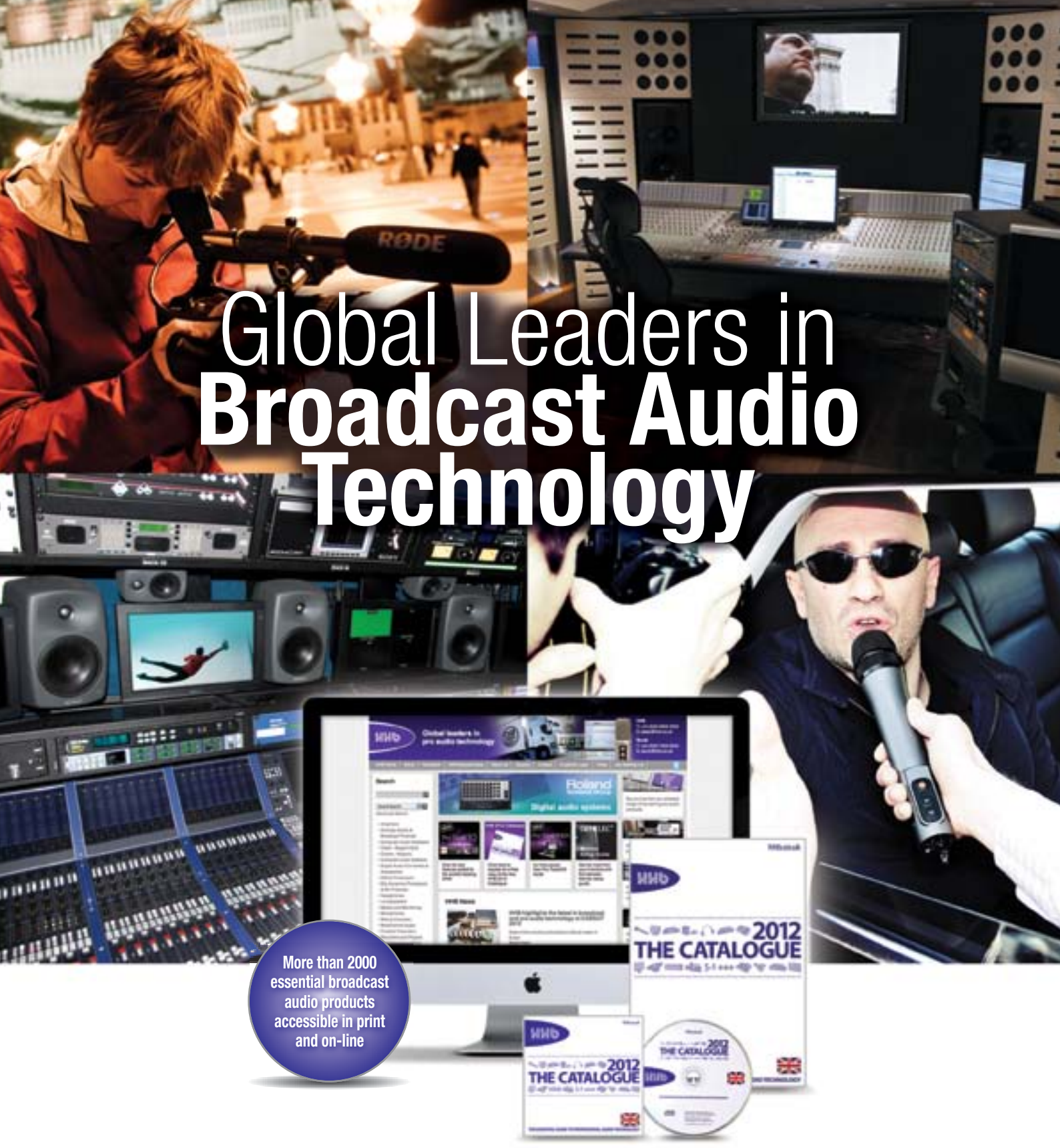
Piste Rouge's larger auditorium 1, used for film mixing and trailers for major French distributors, is equipped with Acheron Studio screen channel loudspeakers, while the smaller auditorium 2 is fitted with more compact Acheron Designer screen channel loudspeakers. Completing the 7.1-surround capable systems are X-800C cinema subwoofers, HMS-10 surround loudspeakers, and Galileo loudspeaker management systems with Galileo 408 processors.
www.meyersound.com

MUNRO VIENNA

MG Sound, founded in 1990 and located in the heart of Vienna, has recently moved into a new building that has been refurbished and designed by Munro Acoustics and local architect Roland Gasperi. The design includes Europe's biggest SSL9000K console and its biggest Axiom MT.

"To move Vienna's most successful independent studio to a new building, double its size and facilities and include a Dolby feature film mixing theatre was a daunting prospect with both technical and logistic challenges galore," said Munro.

The new complex includes three post production rooms, including a dedicated mastering suite, with adjacent overdub rooms.
www.munro.co.uk



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PRODUCT UPGRADE

Waves Audio has expanded the capabilities of its Version 9 plug-in, and it is now available for live use with Yamaha, Allen & Heath, DiGiCo, Venue, and MultiRack Native. If features 64-bit support, faster scanning, faster loading, and faster processing. V9 also sees the introduction of Waves' new authorisation system, Waves Licence Centre, which eliminates use of the iLok.

www.waves.com

PRODUCT ENDORSEMENT

Eastern Acoustic Works has announced that acclaimed FOH Engineer Martin Frey has endorsed EAW Red Certified KF740 arrays for main PA loudspeakers, and will specify them as first choice on all technical riders. The agreement comes after Frey used a KF740 main PA system provided by H.A.S Productions, with whom EAW is piloting the Red Certification programme.

www.eaw.com

ADLIB Takes T In The Park

UK-based rental company ADLIB returned to T In The Park for the sixth consecutive year to provide sound for the King Tut's Wah Wah Hut stage. The crew, led by Kenny Perrin, installed a JBL VerTec system that was specified following its success in the tent in past years. The main PA hangs comprised nine VT4889 speakers per side, with four a side for the two delay towers, positioned left and right of the FOH mixer to ensure the sound radiated evenly out to cover the back of the very large tent. The subs were 16 VerTec 4880s arranged in four blocks of four across the front of the stage, and for infills and outfills, the system design utilised 16 Coda LA8s. All the 4889s were driven from Camco Vortex 6 amps, with Labgruppen PLM 20000s for the subs and in/out fills.

At front of house, ADLIB supplied a Soundcraft Vi6 console and one of its standard Lake processing/matrixing racks complete with two LM44s and three LM26s.

www.adlibsolutions.co.uk

PRODUCT UPGRADE

WorxAudio Technologies has announced its newly upgraded X2-P Line Array. The loudspeaker system incorporates the completely new PXD8080 Dual Channel Power Amplifier. The new two-channel design features 800 x 800 watts and employs a third generation digital class D amplifier with 88% 'green' efficiency. The PMD8080 has a 64-bit processor, offering a 121dB dynamic range with a 96kHz sampling rate. It can store up to 99 factory pre-sets that can be accessed via the LCD screen on the amplifier's face plate, or alternatively by its CAT-5 Ethernet port.

www.worxaudio.com

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GOTTELIER AWARD NOMINEES

PLASA has announced the shortlist of nominees for this years's Gottelier Award. Named in honour of Tony Gottelier, the designer, innovator, and industry commentator who died in 2006, the annual award aims to recognise designers and developers who have made a significant and sustained contribution to equipment development in the live production sphere.

There are two nominees from the audio field; Dr Christian Heil, who founded L-Acoustics in 1984, for his work developing the line array system; and John Meyer, one of the pioneers of modern pro audio, who founded Meyer Sound Laboratories in 1979. The winner will be announced at PLASA on 10 September.

www.plasashow.com

CHINA CHOOSES QSC

The QSC Q-Sys Integrated System Platform has been installed at the Xinjiang International Expo Centre, the main regional conference and exhibition centre in north-west China. Comprising two Core 1000 Q-Sys processors, together with multiple QSC PowerLight 3 amplifiers and speakers from the QSC WideLine, ILA, AcousticDesign and K Series, the QSC audio systems were designed by PCI, the exclusive QSC distributor in China, and installed in over 20 conference rooms at the centre.

www.qsc.com

KAZAKHSTAN LISTENS TO AKG

Asian Pro Music has carried out a complete audio/visual upgrade of the Palace of the Republic in Almaty, Kazakhstan's largest city. Built in 1970, with a 3,000-seat flat auditorium situated under a tented roof, with no balcony tiers, the structure was recently completely renovated. At the same time its technical infrastructure has been boosted as part of the upgrade, which includes an AKG CS 5 Digital Conference System. The Palace is mainly used as a large concert hall, but is also adapted to host film festivals, awards, conventions, and big annual meetings.

www.akg.com

PEPSI CENTER GOES FOR L-ACOUSTICS

The Pepsi Center, a new multi-purpose arts venue in Mexico City, has installed an L-Acoustics KUDO system. The 7,500-capacity venue is constructed to function in auditorium or arena mode. The sound system can be used in three configurations and consists of 12 KUDOs and six SB28 subwoofers per side, with three ARCS II cabinets and two SB28s per side as side fill; four ARCS IIs as front fill and a delay system of three KARAs per side. Fourteen 115 XT HiQ coaxials are being used as stage monitors with two SB18 subwoofers for drum fill. The system is controlled by 26 LA8 amplified controllers.

www.l-acoustics.com

New A&H ZED Mixer

Allen & Heath has launched the ZED60-14FX, a highly compact analogue mixer aimed at small bands and venues. The mixer is a companion to the ZED60-10FX launched earlier this year, with the same 60mm faders but with the addition of an extra four mono/mic channels. Two mono channels have high impedance jack inputs that can take a normal line level or a low level input from a guitar pick-up, so guitars can be plugged straight into the mixer without the need for DI boxes. Two stereo inputs are provided for MP3/CD players of keyboards. The ZED60-14FX also comes with configurable USB audio in/out.

www.allen-heath.com

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PRODUCT UPDATE

Soundcraft has updated the ViSi Remote iPad app to allow control of the Vi Series of consoles in addition to the Si Compact range released last month. ViSi Remote enables a single iPad to control multiple consoles from the Soundcraft Vi Series or Si Compact range on a single wireless network. The app allows users to roam around a venue and adjust input channel levels and mutes, and also aux send levels, matrix sends, and level and graphic EQ settings on bus outputs.
www.soundcraft.com

SUBSCRIBER PRIZE DRAW

Congratulations to William Baird, from Fareham in Hants, UK, who is this month's lucky winner of the Audio Media subscriber's draw. Each month throughout 2012, one randomly selected subscriber will win an sE 4400a microphone. To be entered into the draw, you must have a current digital or online subscription. To get one, go online to the address below. Good luck!
www.audiomedia.com/subscribe.html

FIELD REPORT

Stevie Wonder was the headline act at this year's Rock In Rio (Lisboa) festival, and used three DiGiCo SD7 consoles for the gig. Stevie Wonder himself requested the three SD7s – one for front of house, one for vocal and in-ear monitors, and the third for band monitors. The set included over 80 inputs with each SD7 having two dedicated SD-Racks. The FoH console was on a redundant Optocore loops, with the monitors on redundant MADI. All SD7s were dual redundant mirrored engines.
www.digico.org

Electro-Voice In St Petersburg

The Coliseum, one of the most popular entertainment venues in St Petersburg, Russia, has been re-equipped with a sound system from Electro-Voice. Formerly, exhibitions of the plastic arts were staged in the building, with a smaller hall alongside as a cinema. Ten years ago, the 600-seater auditorium was renovated and equipped with a Dolby-certified sound reinforcement system from Electro-Voice. The new owner of the Coliseum, however, has now converted both venues into concert halls. The Russian EV partner Ruton S was awarded the contract to equip both halls with new sound systems. The systems chosen were XLVC and EVA line arrays.

The PA in the main hall consists of 16 XLD281, four EVA-2151D, and two Xsub enclosures driven by two TG5 and six CP4000S power amplifiers. There are two Dx46 processors as controllers. Monitoring is provided by 10 PX1122M wedges and four EVU2082/95 loudspeaker systems driven by six CP3000S power amplifiers. There are also eight RE-2 wireless systems with a variety of microphone capsules and APD-4+ UHF antenna/power distribution systems – all from Electro-Voice, as are the various wired microphones in the hall.

The second hall is used for smaller shows and corporate events, and is equipped with eight EVA-2082S full-range as well as two EVA-215D subwoofer line array elements. In this venue, there are also CP4000S and CP3000S power amplifiers and a Dx46 controller.
www.electrovoice.com

Kansas City Sound

The Kauffman Center for the Performing Arts has opened in Kansas City, with a Renkus-Heinz sound system. The 1,600-seat Helzberg Hall has a semi-circular configuration that surrounds more than 270 degrees of the 2,700-square-foot stage. The venue's acoustics were primarily designed for symphonic sound, so there is a dual sound system, one for music, and the other for voice intelligibility. The main performance system is based around Renkus-Heinz ST-Series reference point arrays, with left and right clusters of ST4, augmented by ST-2M cabinets. Rear and side fills are provided by ST2-R and ST2-MR boxes, while TRX62H compact systems provide over balcony fills. A dozen PNX112 subwoofers are built into the stage lip, while 72 Iconyx SSL drivers are built into a custom baffle inside the balcony for additional coverage.

The voice reinforcement system utilises three Iconyx IC16-5 digitally steered arrays. The three columns are arranged in a 360-degree configuration, with each column covering a 120-degree pattern.

The seven-story glass enclosed lobby also has Iconyx systems to help with spoken word intelligibility, with three more IC16-R arrays concealed behind a metal grille.
www.renkus-heinz.com

FIELD REPORT

PA Company Production Hire rigged the stage outside the Rock of Ages film premiere at the Odeon Leicester Square, London, with Martin Audio's new MLA Compact. Fictional band Arsenal, who Tom Cruise fronts in the movie, played on the balcony of the cinema. The sound had to deliver concert levels for the audience, while ensuring the surrounding businesses had minimal intrusion and could stay open. Rigging restrictions necessitated the two line array hangs to be rigged asymmetrically, with different trim heights. Software programming was used to optimise the sound to provide identical coverage from each hang.
www.martin-audio.com

FIELD REPORT

The Boston Symphony Orchestra has again used DPA Microphones for its nationally broadcast, live Boston Pops Fourth of July Fireworks Spectacular. Held annually in the Hatch Shell at the Esplanade along the Charles River, the concert and fireworks show has an audience of 400,000, as well as being the most watched Independence Day programme in the US every year. The d:vote 4099 instrument microphones were used in the strings section, 4023 compact cardioid microphones were on the piano and in the woodwind section, and 4066 omni headset microphones were worn by the vocalists and the narrators.
www.dpamicrophones.com

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All's Fair In Love And Music Rights

KEVIN HILTON looks at how a new scheme by PPL will help to ensure that producers receive their fair dues when it comes to royalty payments for creative input.

Nobody likes doing paperwork, and if anyone says they do they're either trying to come over as all efficient and together or are just a bit weird. But the clerical stuff is absolutely necessary and letting it slip or not being that organised can have ramifications further down the line. Which is the thinking behind a new scheme introduced by PPL.

At one time more formally known as Phonographic Performance Limited, PPL is the music licensing company that manages collective rights of recorded music and music videos that are used in public performance, broadcasts, and for "new media", such as the Internet and mobile services. The income it receives from this use is distributed for payment as royalties to artists' record company and the performers involved in the recording.

Someone else who qualifies for payment is the producer but, in the past at least, there has often been some confusion and even conflict over how much of a contribution he or she has made to receive royalties. After approximately 18 months discussion with music industry bodies including the Music Producer's Guild (MPG), Featured Artists Coalition (FAC), Music Managers Forum (MMF), Equity and the Musicians Union (MU), PPL has introduced an Eligible Studio Producer Form to clarify the situation and ensure that those who have payment coming to them receive it.

Some producers are also musicians and if they perform on a track their role is easy to quantify because it is what PPL refers to as an "audible contribution". Even if they do not play or sing on a track, producers still contribute to it by conceiving the sound of a piece through the mix and use of technology. This is less easy to quantify and is classified as a "non-audible contribution", for which a producer can be paid royalties by PPL "in certain circumstances".

The new form is intended to allow those involved in a recording to better understand the entitlement of studio producers to a payment. "This form, following the investments we have made into our systems, now means that all parties can agree at the point of recording what contributions have been made on a track," explains Peter Leathem, Chief Executive of PPL. "In the past, supplying this confirmation to PPL has not been administratively easy for studio producers. The new form offers a practical solution for studio producers to make royalty claims. It is not a change in policy but, by introducing this simple and transparent process, it allows all parties to reach agreement at the time, which in turn will clarify the payment process. In today's digital age accurate and timely data is critical."

> "We've had a couple of situations recently where producers who have been getting income suddenly stop receiving it because the artist concerned has changed management…"

As well as creating a "simple, practical" way for producers to claim royalties from PPL, another benefit of the form is seen as allowing the producer to agree with featured performers when the recording is in progress what contributions he or she has made. This will allow the producer to validate more easily any PPL claim and receive the right payment for the contribution. The ultimate aim is to enable PPL to make fair and efficient payments, better manage track line-up data, and prevent any possible dispute in the future.

Record producer Steve Levine, who is also Chairman of the MPG, says the rights to remuneration "have been there for a number of years" and while some producers are "very aware" of their entitlement and put in the relevant claims, others are not so alert to their rights. But even if someone is on the ball, Levine says, a change in circumstances can have a negative impact. "We've had a couple of situations recently where producers who have been getting income suddenly stop receiving it because the artist concerned has changed management," he explains. "This can cause conflict because there can be different memories of what happened on the session."

Levine says such instances are dealt with by PPL on "a case by case basis" because, sometimes, there is little or no documentation to state who did what. Levine acknowledges this means PPL has to spend a lot of time in administrating these cases, which costs money. It can also lead to protracted and bitter arguments between producers, artists, and managers.

"This situation could not continue and I am really pleased that PPL has taken steps to clarify exactly how a studio music producer can qualify," he says. Levine compares the position of the non-audible contribution producer to a classical conductor, in that they shape and direct the sound of a recording. "With guitar-based indie bands the producer's role is more of a mentor," he adds, "So we need to capture the data of that contribution."

Different musical styles also have differing attitudes to the role of the producer. In r&b the producer can also be an artist or DJ and so is the main creative and performing force. But r&b records can feature a number of producers, each one handling a different aspect of the process, from the original recording to the mix and re-mix. "That makes it a more unusual case," Levine comments, "but it is important to note who did what and when." He concludes that a primary objective of the MPG was to clarify the whole logging and payment process, which he feels PPL has done.

As much as the new PPL form will ensure producers get their fair dues, no doubt some will still complain about the extra paperwork.

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OPTIMOD 8685

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RA in Bollywood and Beyond

Roger D'Arcy of Recording Architecture fame spent much time in the sub-continent where he was responsible for the design and build of some of India's leading studio and production facilities. He spoke with JIM EVANS…

When did you first work in India and what was your first project there?

January 2000 – Spectral Harmony – a ground-up music recording/scoring studios for Bollywood film industry in Mumbai. The main Platinum Suite (ATC monitoring in 5.1/Neve console) comprised a large control room and associated live studio with booth. The smaller, Silver Suite has become a highly sought after space for recording particularly female song vocals. The Platinum suite was virtually destroyed in a serious fire a few years ago – the remaining shells were pulled down and the spaces reconfigured to form a new RA-designed film mix theatre and a track-lay control room, both contact to a new smaller, shared live studio.

How many facilities have you designed/built in India?

Sixteen studio facilities including multi studio facilities: Spectral Harmony, Studio One, Sound City, Fiesta, Quality Labs, Amar Mohile, Future Music, Prime Focus (Mumbai Central), Navketan, Film Labs 1, Whistling Woods Institute, Adlabs Kolkata, Prime Focus HQ (Royal Palms), Film Labs 2, INX TV, and Spectral Harmony (complete redesign/rebuild following fire).

Plus, several non-studio related/non-acoustic projects – including a private party hall/screening room and the acoustics of the remodelled and iconic Roxy cinema for Yusuf Lakdawala (Sound City), lecture theatre acoustic treatment for Jnanapravaha Arts Institute, the design of RA representatives, Cineom Broadcasts` new offices, and a handful of un-built projects including TV studios, music studios and a private residence.

Are the studios mainly film/ Bollywood oriented?

The answer largely has to be yes – the majority of RA projects have involved film mix theatres (aka dubbing theatres in the UK), pre-mix theatres, or music studios where the product is almost always destined for film. That said, it is important to understand that Bollywood (not a fixed geographical location like Hollywood, but the collective businesses of the mainly Hindi speaking film industry in and around Mumbai) is only one of several different, and pretty much self-contained and independent film industries catering for the different regions and multiple languages of India – e.g., the huge film industries based in Chennai (Madras) and in Kolkata (Calcutta) – RA designed and built a film mix theatre and music studio for Adlabs in Kolkata, the centre for Bengali language films and located in an area known as Chollywood, named after the suburb where most of the industry was originally based. There are also major television post production industries in Mumbai, New Delhi, and other major cities.

Which facilities are you most proud of and why?

Spectral Harmony will always hold a special place for us as it opened up an unbroken chain of projects for RA spreading over a decade. It was also this project that introduced us to our future representatives and strategic partners, system integrators, and pro-audio dealers Cineom Broadcast. Our Indian operation grew alongside Cineom and led to the formation of Recording Architecture India Pvt Limited which hugely simplified the process of doing business in India.

Spectral Harmony was built to totally uncompromising standards – our inspirational client, Raju Sud, spared no expense in following our design specifications to the letter. We always try to use locally sourced materials in our projects around the world – at Spectral, acoustic foam was specially made in local plants, suitably sized dense concrete blocks were produced literally on the site and the 'trademark' RA perforations painstakingly drilled by hand due to the lack of appropriate manufacturing facilities at the time – I would add that things have moved on almost unrecognizably since 2000 and it is possible to get almost anything made or supplied in India nowadays. A bare minimum was imported from the UK – as always, the specialist membrane material for the low frequency absorption and the load-bearing vibration isolation strip for the walls of the sound-isolated envelopes (the latter now being widely available).

Another project close to my heart and incomparable for shear client (Yusuf Lakdawala) enthusiasm and support, I am incredibly proud of what we achieved at Sound City, again with an uncompromised specification and a dramatic interior design concept that we were encouraged and allowed to develop and implement in full.

Is there still business to be had in India for studio designers and builders?

Most definitely yes, but over the last couple of years India (and the studio/film industry) has begun to suffer the same pressures as the rest of the world (having appeared almost immune at first) – firms like Cineom Broadcast and our associate architects, The Firm in Mumbai, are increasingly looking abroad themselves (particularly across the Middle East) for clients and projects.

We have collaborated on a couple of major projects with them both in RA-sourced commissions in Qatar and Ukraine. I think it is fair to say that we raised the studio design bar pretty high in 2000 with Spectral Harmony (and have helped to keep it there for over a decade) but over that period, the home grown consultancies have grown and matured – for example Didier Weiss and his Sound Wizard company working out of Pondicherry near Chennai are now doing a tremendous job across all genres of studios. With last summer`s publication of *RA:The Book* (available and selling well through Cineom) and the subsequent closing of RA's doors in London, I have actually begun to recommend Didier for projects – so far in Mumbai and New Delhi. I think maybe it is an appropriate time for us to peacefully withdraw from the scene... but fond memories, some wonderful projects and some great, life-long friends made.

Alcons Audio Establishes in India

Alcons Audio has opened a direct office presence in India, offering customers full factory support. The Dutch manufacturer will be operating out of Mumbai and Bangalore initially, with expansion planned to other cities in the near future.

"Alcons is installing systems around the world and it was high time we entered an important market like India," says co-founder and managing director Tom Back. "Having successfully established our American presence, India is the next step. It is an important growth market – like Brazil, China, US, and Europe – and since we didn't have a distribution presence here we have set up a direct office."

"A quality brand like Alcons requires direct factory support so that we can give reliable and sustainable technical advice and customer support," says Alcons Audio India MD John-Paul Douma. "It is a commitment to our brand and to India, saying: we're here and we're here to stay."

The initial hires for the Alcons India team include sound professionals Dhaval Mastakar (sales manager) and Amesh Sharma (technical support manager), both ex-Harman. Akshata Sirsikar, who has a background in the Indian music industry, completes the team as head of marketing.

"Apart from being a growth market, India has a rich cinema tradition and we have the optimal products for this," says Tom Back. "Developments like 3D and digital cinema have enhanced the cinematic experience and Alcons' Cinemarray cinema systems generate a sound quality equally superior. Together they create a whole new level of cinematic experience."

MEDIA MATTERS

Indian broadcasting is flourishing and TV and radio outlets are proliferating.

By late 2011, 106 million Indian homes had access to cable and satellite TV and there were more than 700 TV channels, an industry website reported. News programmes often outperform entertainment output. There is an array of 24-hour news TV stations.

Doordarshan, the public TV, operates multiple services, including flagship DD1, which reaches some 400 million viewers.

Multi-channel, direct-to-home (DTH) satellite TV is a huge hit. Major platforms Dish TV, Tata-Sky, Sun Direct, Big TV, and Airtel Digital TV have millions of subscribers. State-owned Doordarshan Direct runs a free-to-air DTH service.

Music-based FM radio stations abound. But only public All India Radio can produce news programming.

Around 121 million Indians were online by December 2011 (Internetworldstats.com). The online revolution has largely bypassed rural India, a government study has shown.

Re-Positioning A-Loud

Loud Technologies has announced plans to "achieve a well-deserved position for its EAW and Mackie brands in India".

Key to the Company's aggressive growth plans are two new distribution partners: Bangalore-based E&E Systems India Pvt, who will handle exclusive country-wide distribution for the Mackie brand; and Mumbai-based Vardhaman, who will handle exclusive country-wide EAW distribution. E&E and Vardhaman join Musik City, the exclusive Ampeg distributor, to complete Loud's sales force in the rapidly growing Indian market.

"The Indian market is every bit as dynamic as the country's rich musical culture and requires both innovative products and world-class service," explained Mark Graham, Loud's CEO. "We are honoured to add E&E and Vardhaman to our Indian market team and know they will invest significant time and effort in sales, service, spares and support. Over the coming months Loud will add additional in-market resources, including a country manager and a technical and service lead."

Sony's Garry Taylor Announces PlayStation's Loudness Proposition

Audio Head Honcho for Sony Computer Entertainment Europe's Creative Service Group, Garry Taylor, used his recent DEVELOP conference speech to announce a warmly received set of proposed loudness standards for PlayStation interactive entertainment platforms.

During an engaging exposition of the work of the Sony Worldwide Studios Audio Standards Working Group (AWSG) (which apart from Taylor himself includes representatives from Sony America and Japan) he outlined the approach and process that has led to a clear modus operandi for all 'first party' game development studios (wholly controlled by Sony), pointing out that ASWG is not part of SCEI, the manufacturers of PlayStation hardware, but rather focuses, at this stage, on their key 'in-house' developers who make global hits such as *Uncharted*, *Killzone* and *LittleBigPlanet*.

> "To formulate and disseminate within SCE and to the wider development community working on SCE platforms, standards, recommendations, and best practice documentation for the development of audio content contained within interactive entertainment."

Their mission statement: "To formulate and disseminate within SCE and to the wider development community working on SCE platforms, standards, recommendations, and best practice documentation for the development of audio content contained within interactive entertainment."

In summary, the group's aim is to give the consumer a consistent loudness experience, promote good engineering practices, and future-proof PlayStation formats such as the PS3 and VITA. Their loudness recommendations are:

- PS3 target loudness: -23 LUFS +/- 2 LU
- PS Vita target loudness: -18 LUFS +/- 2 LU

In essence, the group has broadly adopted BS1770-2 but is mindful that it is designed for linear media, and that given the somewhat unpredictable nature of videogame replay driven by user input, reproducibility issues are ongoing, i.e., one user's experience may potentially differ significantly from another's depending on their style of play and 'at run-time' inputs to the game audio engine via their own game-playing behaviour.

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> "BS1770 gives us the tools we need to win the loudness war. Within Sony we have universal support, although there are still issues over reproducibility given the interactive non-linear nature of programme content. My advice is buy a loudness meter and get used to using it!"

In exploring the issue, they also took into account the following considerations:

- PlayStation hardware is capable of delivering audio with an extremely wide dynamic range.
- DSP, codecs, and down-mixing require headroom and enough must be reserved to work with.
- Different platforms are used in different environments with different noise floors.
- It's not just games that are enjoyed on PlayStation platforms.

The team measured over 120 games, films, trailers, and TV shows, in both stereo and 5.1 with titles measured over a period of between 10 and 30 minutes. Their findings were:

- Average loudness level
- 32 films: -23.13 LUFS
- 24 TV shows -22.50 LUFS
- 52 Games: -17.78 LUFS

They discovered that, on average, games are 50% louder than TV and film.

The resulting guidelines drawn up include the following recommendations:

- True Peak should not exceed -1 dBTP
- Loudness Range should not exceed 20 LU
- XMB Thumbnails (game previews in menus) should measure a maximum of -23 LUFS for PS3 & -18 LUFS for Vita

They also determined that PlayStation software products should be measured for a minimum of 30 minutes, with no maximum, and those parts of the game measured should be a representative cross-section of all the different parts of any title from cut scene to gameplay.

Taylor: "We're adopting monitoring reference levels specified in ATSC A/85, which are based on room size. Audio should be measured as a whole and should not focus on dialogue, music, or speech specifically – and 'splash screens' should be measured separately."

Discussing the practicalities of measuring loudness he shared the following thoughts: "Bear in mind that the default PS3 down-mixing formula reduces the stereo volume by 3dB and of course, certain types of games vary in loudness depending on play style. We are currently looking at reproducibility issues, collecting data from First Party QA, and may revise tolerances and measurement guidelines in the future."

To comply with the ASWG recommendations he advised developers that the easiest way is to put a compressor and/or limiter on the master buss whereby the compressor ratio and threshold gives control over the Loudness Range (LRA) and the compressor output/make-up gain gives control over loudness (LUFS).

"BS1770 gives us the tools we need to win the loudness war. Within Sony we have universal support, although there are still issues over reproducibility given the interactive non-linear nature of programme content. My advice is buy a loudness meter and get used to using it!"

Commenting on the reception for his announcement from the wider game audio development community gathered in Brighton, Taylor reported: "The feedback I've received so far has been extremely positive with a number of big developers voicing their support for the initiative. In my opinion, this is something that should have been done a long time ago and I'm looking forward to working with developers both internally and externally to bring this to fruition. However, there's still lots to be done, and our greatest challenge will be educating game directors and producers and making them aware of the benefits, and how this will help their audio teams make great sounding games." AM

Clearly creative.

The **Prism Sound Orpheus FireWire interface** has clearly established itself as the only solution for those looking for **unparalleled** sound quality, reliability, flexibility and peace of mind which can only come from over 25 years of leading audio expertise. Prism Sound's **state-of-the-art** clock technology and **ultra-clean** analogue signal paths provide you with the clarity to translate your creativity as you intended. Orpheus's compatibility with the latest **64bit** operating systems from Windows and Mac OS X as well as **Thunderbolt*** support ensures seamless DAW integration, both now and in the future.

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*adapter required

A compact yet powerful user-friendly lightweight digital amp.

POWERSOFT K&M DIGITAL SERIES

Digital Power Amplifier

The M Series features four-channel amplifiers with optional digital signal processing. The four channels of relatively high levels of RMS power are produced from one single power supply, and the entire package fits in one rack space. The M50Q (which we reviewed) is host to four volume controls (one per channel) and an on/off switch. The rear panel is home to the I/O, which includes four Neutrik Speakon outputs and four XLR balanced inputs. The K Series amplifier is equal in size, but is a two-channel unit with internal DSP, an Ethernet/AES3 interface, and a digital menu. Powersoft K Series amplifiers feature Powersoft's Power Factor Correction (PFC) technology, which creates a buffer between the power network and the power supply, allowing storage of a large amount of energy in a storage bank. PFC technology keeps the storage inside the amplifier 'full and ready', independent from the power supply. This allows the delivery of very high current draw even at 2Ω loads, regardless of voltage.

Both amplifiers give superb attack speed in both mains and monitor applications, with no latency properties from A/D conversions. They excel on the attack of drums and percussion, the smoothness in the vocal range and the ability to handle subwoofer applications.

£ GB£ - Contact distributor for details
Ⓦ www.powersoft-audio.com / www.cuk-audio.com (distributor)

CONCLUSION

All in all, these Powersoft M and K Series power amps are an excellent addition to any rig.

The K Series unit with DSP+AESOP, in my opinion, is more suited to a main speaker system use, especially with the 2Ω capability, on-board DSP, with digital menu. The front panel access of the menu makes operation of the Powersoft K amplifier exceedingly simple. The optional Ethernet/AES3 interface allows easy connectivity to Powersoft's Armonía software, which provides easy set-up, network monitoring, and control of Powersoft amplifiers.

Before this review, I had not experienced Powersoft amplifiers. After experimenting with these two units, I am quite impressed with how versatile these digital amps really are, as I have had prior experience with other digital amps through the years. These may be the best sounding and most powerful I used. Thus, I give a full recommendation of the Powersoft K and M Series for touring, one-off gig, or installation applications.

They are fully roadworthy and handle extreme temperature locations very well.

Will James

SOURCE
Audio Media January 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201201/

A small digital console designed to replace your small analogue console.

ALLEN & HEATH GLD

Digital Live Sound Console

For Allen & Heath, the GLD challenge was to replace the simplicity, reliability, sound quality, and cost of the original and much-loved analogue GL consoles with something digital. Why? Well, because it should be better. For a start, the simple additions of scene/cue recall and moving faders remain novelties in some places. Then there's processing and effects, layout flexibility, and more. Venues might even find that they can accommodate new business because of it, or that things that were difficult or impossible before, will become easy. How many local theatres have a rack of effects to call upon, or the extra facilities and headroom to accommodate, say, a touring talent with a band in tow.

The system consists of a main mixer unit (the GLD-80) plus I/O expansion rack options.

GLD-80 has all DSP on-board, 20 motorised faders, and a 8.5-inch touchscreen. Local I/O consists of four mic inputs, four XLR outputs, digital output, and MIDI, plus a local I/O expansion slot.

One neat facility is the ability to record and playback to/from a USB memory stick. You can record from any buss, master, aux send, or matrix outputs in WAV format, plus play back in WAV or MP3 format from the stick.

£ GLD-80 + GLD-AR2412 £5,652.91 ex VAT
GLD-80 + GLD-AR2412 + GLD-AR84 £6,267.35 ex VAT
Ⓦ www.allen-heath.com

CONCLUSION

Possibly the most striking thing about the GLD is how accessible it looks... there is the sense that it gets straight to the point of being a mixer. The colours along the faders inspire confidence that you won't get lost; the touch screen is well proportioned, and the channel strip isn't squeezed into a corner...

For me, the point of a GL console was always that you could come in, plug in, and know that your show/event/function was well catered for, and that the mixer wasn't going to demand more of your time than the client.

Allen & Heath promises that the GLD can deliver. But now there's a 'D' at the end, maybe every now and again you could pull something special out of it's tool bag that makes the difference between 'sound reinforcement', and 'sound design'.

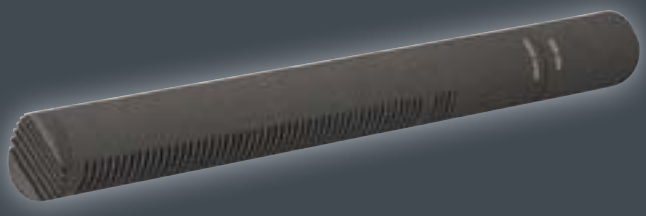
Paul Mac

SOURCE
Audio Media January 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201201/

MKH 8060 Short Gun Microphone.
Capturing the Moment.

Whether it's a feature film, documentary or ENG, the new MKH 8060 gives you sound quality that matches your exciting pictures.



Whether you're in the studio or on location, its excellent directivity and improved off-axis linearity ensure a clear and natural sound recording, whilst its RF circuitry means that it's virtually immune to damp and condensation.

Part of the flexible MKH 8000 series, just add the MZD 8000 and you have a digital mic.

www.sennheiser.co.uk

SENNHEISER

A versatile high-spec console that can be used for the stage or the studio.

DIGICO SD10 & SD10B

Live & Broadcast SD Series Consoles

DiGiCo's successful range of SD consoles is based on the power and programmability of the company's Stealth Digital Processing, via a Super FGPA engine. The latest additions to the family are the SD Ten live console and its broadcast specific counterpart, the SD Ten B. The SD Ten provides 96 channels of full processing and 48 assignable busses.

The SD Ten works with DiGiCo's second-generation I/O, the SD-Rack, which delivers up to 192kHz, and has the ability to connect up to 14 racks and five redundant-engined consoles to the system, with 448 audio channels on a single redundant loop. It comes with a raft of new options that add to the general utility of the console, and the SD Ten B application specific extension adds a broadcast-specific feature set. There are 37 touch sensitive faders included, plus four layers of 10 SmartKey Macros. Multi-channel 'folding' allows configuration of stereo, LCR, 5.1, or up to 11 mono channels under a single fader strip.

The SD Ten's powerful processing includes channel delay, single and multi-channel presets, HPF and LPF, four bands of parametric EQ, compressor and gate, dual insert points, and access to all bussing. Output channel processing includes output delay, eight bands of parametric EQ, compressor and gate, dual insert points, groups with buss to buss routing, and auxes that have direct talk to output with dim control.

DiGiCo has also partnered with Israeli software company Waves to bring its Sound Grid technology onto the SD platform. The Waves plug-ins are provided in addition to the console's own Stealth FX, and provide access to much of Wave's renowned software including bundles such as Mercury, SSL 4000 Collection, GTR3, JJP Analog Legends, Studio Classics Collection, the API Collection, and Gold, as well as individual classics such as the L2 Ultramaximizer and C4 Multiband compressor.

£ SD10 from GB£35,000, SD10B from GB£40,000
Ⓦ www.digico.biz

CONCLUSION

All of this makes the relatively diminutive SD Ten physically imposing as well as ergonomically well equipped.

The company is confident that the broadcast model of the SD Ten will prove popular. "There are a lot of extremely good high-end broadcast consoles in the market already, but the SD Ten B fits a different tier of budget and still offers all the features and functionality of the bigger consoles, such as surround sound, channel folding, large scale 5:1 monitor matrix, and so on," said James Gordon, Managing Director at DiGiCo. "There's currently no console at this price point that offers comparable features."

Stephen Bennett

SOURCE
Audio Media May 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201105/

Small digital broadcast consoles with colourful new features.

LAWO CRYSTAL & SAPPHIRE

Digital Broadcast Console

Crystal offers 16 fader channels from up to 128 sources. DSP-wise it can arm up to 16 EQs, 16 dynamics units, 16 limiters, 16 delays, 32 summing busses (including PFL), and 32 mini-mixers (2x2). Surface options range from a basic four-fader unit up to 12-fader split and 16-fader units. The latest RAS (Radio Automation System) template joins 'Edit Suite' and 'Radio On-Air' templates.

Many buttons and button functions can be customised. When installations are being upgraded, existing working practices can be facilitated.

The Crystal channel strip has the really important stuff in the fader section (PFL, Mute, OLED, status LED, fader, and Access button), topped by the DSP section, which has four multi-function buttons surrounding another OLED, plus a rotary encoder for parameter adjustment. The Lawo colour scheme is introduced at this point, where processes are divided up by colours and relevant buttons turn the appropriate colour when the function is selected.

There are a set of analogue and digital I/Os, plus GPOs, two headphone sockets and wordclock I/O on the back, while on the front are optional I/O slots, the MADI options, and RS422 and Ethernet connections.

The Sapphire is based on the same control conventions. The core of the system is based around the Lawo Dallis I/O system. It contains the main Sapphire DSP and control card, and then the slots are available for populating as required. Up to 384 I/O channels are supported.

The Sapphire has moving faders, and the surface has an additional extension module control section that can be populated in groups of four faders. The centre section has monitoring controls, multi-function OLED/Button sections, and DSP selections/control.

The surface configuration of the Sapphire is very flexible. The system can handle up to 60 physical faders, split in various ways – around a single desk, or even at multiple desks for multiple operators.

£ Lawo Crystal: prices from €6,000.00,
Lawo Sapphire: prices from €25,000.00
Ⓦ www.lawo.de / www.preco.co.uk (distributor)

CONCLUSION

It seems that the beauty of both the Crystal and Sapphire consoles is that they are designed to be redesigned. The surfaces are sleek, spacious, solid, colourful, and reasonably straight forward. Some of the details in how DSP effects are edited, colour-coding of buttons, little button 'tricks', and so on, should be easily absorbed through experience with the product.

The simplicity of their surfaces combined with the power and flexibility that lie beneath make the Crystal and Sapphire consoles very desirable packages.

Paul Mac

SOURCE
Audio Media September 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201109/

MIDAS PRO2C

Compact Digital Console

Small, light, and inexpensive – a little live console that should fit right in.

As standard, the Midas Pro2C comes with a DL251, giving users a stage box with 48 analogue XLR mic inputs and 16 XLR line outputs in a fixed architecture. Further I/O box units, multi-track recorders, and other options can be added to the remaining four AES50 ports on the console. The console provides eight analogue mic/line audio inputs and outputs, plus three digital AES/EBU input and output pairs. Eight additional outputs are labelled as master outputs, talkback I/O, and local monitor sends. MIDI is available at the stage end, whilst wordclock and MIDI are provided on the console itself.

Point to point routing can be done from anywhere on the network, and with an iPad and wireless router, a fully integrated remote control system can be set up.

The main controls are the same as other Midas digital systems – the hardware controls that were on the control surface still exist in the software. Patching inputs and outputs is done graphically, and is quick and easy. Users can also assign anything anywhere they like. The preset library allows users to store and recall their own custom patch files, compressor settings, EQs, effects set-ups, etc.

There are several ways to adjust the graphic EQs – the eight faders in the middle bay can control (and scroll) blocks of eight frequencies, or the navigation keys can be used, and assignable rotary controls to edit blocks of virtual sliders.

There are six 'rack spaces' available for effects units, each able to have eight inputs and eight outputs, giving plenty of scope for onboard digital effects. Powerful automation features include a recall scope and a store scope, plus hardware safe switches for each input and output on the entire console. When a new show is loaded, Midas Pro2 consoles keep the current scene loaded, active, and fully controllable until a new scene is recalled from the newly loaded show. The active scene can then be saved to the newly loaded show as a scene. This allows the seamless uninterrupted recall of different shows, and an easy, logical way to copy scenes between show files. The show editor allows any parameters from the loaded scene to be copied to any other scene very quickly.

£ **PRO2 TP (Tour Pack) US$ 29,400.00, PRO2C TP: US$22,700.00**

Ⓦ **www.midasconsoles.com**

CONCLUSION

Midas has created a beast that I hope will be popping up in venues of all sizes. There are concepts that, once grasped make the console an absolute joy to work with – as well as being incredibly quick. The sonic openness and clarity of the system should really be compared to anything else to be believed. Even without this comparison handy you can hear how good this thing sounds. The PRO2 and PRO2C consoles are fantastically powerful little systems that can easily run sonic rings around the competition.

Ben Burns

SOURCE
Audio Media June 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201206/

MIDAS PRO1

Compact Digital Console

The über-light and ultra-compact standalone digital console from Midas.

The Midas Pro 1 is the smallest of the Pro family, and is the last to be introduced. The small and lightweight Pro 1 has all the functionality of the bigger consoles in the range, and is Midas's first standalone digital offering. The Pro1 has an entirely new all-aluminium frame, which is how the company kept the weight down to just 21.5kgs. It is equipped with 24 mic inputs and 24 outputs on the back, so users can now simply plug in a microphone and start mixing. The console also works with all Midas's I/O digital stage boxes.

The features are almost identical to the Pro 2 and Pro 2C consoles; it has the same FX, the same processing, and the same generation 2 software, the latter meaning that all Midas show files are fully compatible.

The Pro 1 has 16 faders, and its default state is eight input faders and eight VCA faders. It has a total channel count of 48 (including its eight aux returns), though combining the onboard I/O with its three AES50 boards means a maximum network size of 96 inputs and 96 outputs can be achieved. This flexibility and versatility means it is suited to applications where a mixer is needed in a very small space, for example theatres and houses of worship.

There are plenty of Midas plug-ins: six different reverbs, two delays, flanger, chorus, phaser, dynamic EQ, and multi-band compression. Other functions include swept high and low pass filters, two separate gain controls, the same multiple compressor plug-ins as the larger consoles, a four-band parametric EQ for all the inputs, and a six-band parametric EQ for each of the Pro 1's 27 mix busses. The Pro 1 also has a large daylight-visible TFT screen which means even in direct sunlight the user will still be able to see everything on the screen.

£ **Midas Pro 1 US$11,500**

Ⓦ **www.midasconsoles.com**

CONCLUSION

The Pro 1 should be shipping by August. "We've had a handful of them out, in Europe mostly, doing low-profile beta testing shows over the last few months, which really helped us prepare for this release," said Richard Ferriday, Brand Development Manager at Midas. "We were able to add a few extra bits to the console and tweak some features as a result, and thankfully the feedback we've had so far has been really great."

SOURCE
Audio Media July 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201207/

Affordable, versatile, small-format digital console.

PRESONUS STUDIOLIVE 16.0.2

Compact Digital Console

The StudioLive 16.0.2 has a footprint of less than two square feet, which is useful for touring engineers and smaller music venues who need both sophisticated sound reinforcement and music capture/production capabilities. Its remote-control features also make it useful for contractors.

The 16.0.2 provides 16 channels – eight mono, four stereo; 12 of them (1-8, 9, 11, 13 and 15) equipped with Class A XMAX pre-amps. The channel inputs are as follows: mono channels 1-8, 9 and 11 (the left side of the stereo pairs 9/10 and 11/12) have both XLR and quarter-inch balanced inputs; channels 10 and 12 have quarter-inch balanced inputs only; channels 13 and 15 (the left side of stereo pairs 13/14 and 15/16) have XLR, quarter-inch balanced and RCA unbalanced inputs, while channels 14 and 16 have balanced 1/4-inch and unbalanced RCA line inputs.

A main feature is the Fat Channel – each individual channel, aux, FX buss, and the main stereo buss, when selected, has one of its own, complete with a downward expander, compressor, three-band semi-parametric EQ, limiter, and high-pass filter. Phase reverse and phantom power are available on the channel inputs; stereo channels access the Fat Channel as stereo pairs. The workflow and logic of Fat Channel gives engineers a fast and easy way to troubleshoot and execute a command.

There are 130 options for signal processing. Once familiar with the StudioLive layout, the minimal layering of pages makes it user-friendly. The 16.0.2 can simultaneously handle multi-track recording as well as live mixing, and the PreSonus software – Capture and Studio One Artist – provides the tools for multi-track recording and playback through the 16.0.2; it will also work with any DAW that supports ASIO or Core Audio, including Pro Tools 9 and later.

Unlike its larger counterparts in the StudioLive series, the 16.0.2 has MIDI capabilities. Users may MIDI control main level output, scene change, effects assign, effects pre-set change, and effects level via the hardware MIDI I/O. This I/O also acts as a regular computer MIDI interface.

£ GBP£1,289.00

Ⓦ www.presonus.com / www.sourcedistribution.co.uk

CONCLUSION

The PreSonus' low learning curve makes it a great tool for a venue that has many different individuals in the engineering hot seat, especially for those that may not be familiar with digital consoles.

Liz May

SOURCE
Audio Media February 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201202/

The flagship console of the V-Mixing system takes a lot of beating.

ROLAND M-480

Live Digital Mixing Console

The heart of Roland's V-Mixing system is REAC (Roland Ethernet Audio Communications). In turn, the M-480 console is at the heart of a number of components that can make up an extensive REAC system. The console features a newly designed mix engine, which can handle up to 60 audio channels with a fixed buss architecture including main (LCR), 16 aux busses, and eight matrices. The new cascade function allows up to 96 inputs and up to 90 outputs to be mixed using two consoles and one CAT5e/6 cable. The console also has four-band advanced parametric EQ, and delays on all inputs and outputs; compressors and gates on all mixing channels; and six built-in stereo multi-effects and 12 graphic EQs. The user interface is essentially cursor keys and a data wheel. The M-480 has a central display and buttons, with function keys that change depending on the selection. The desk has an extensive 300 scene memory with global scope, recall filter, and lock functions. Everything except the talkback section, USB recorder playback state, and user settings is recallable.

With two button pushes, users can see the current REAC input patched to any channel. Onboard dynamics processors are fast to access and it is easy to insert gates and comps on any channel. Each gate has a key input that can be soloed to fine tune the response of the gate. The thresholds of the dynamics processors can be adjusted via a dedicated encoder.

£ GB£7,499.00 (exc. VAT)

Ⓦ www.rolandsystemsgroup.co.uk

CONCLUSION

For the price point, this is a seriously useful piece of kit, although building a large REAC set-up would cost a fair amount. If it proved to be reliable it could be a cost effective way of building an integrated mixing, recording, and audio distribution system. If you need to work with video then there are many boxes being ticked by this console, even more so if you use Roland's V-link enabled vision mixers. Taking into account the capability, footprint, ease of use, apparent stability, and price point, this desk is probably quite hard to beat.

Ben Burns

SOURCE
Audio Media June 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201106/

YAMAHA CL SERIES

Digital Live Mixing Console

A preview of the newest digital console range from Yamaha.

Yamaha's press information describes the new CL Series as "taking digital mixing to a new evolutionary level." The three-model CL Series was launched at ProLight + Sound 2012 in Frankfurt. The CL1, CL3, and CL5 start at 48 mono inputs, rising to 72. Each model has eight stereo inputs, 16 DCAs, 24 mix busses, eight matrix busses, plus stereo and mono output busses. On board I/O is via eight mic inputs, eight line outputs, and three MY card slots. Additional capacity is via external Dante-connected racks.

The number of input channels is the only variable capacity across the range. All other numbers are consistent across the models, including effects capacity and number of graphic EQs. The system can be scaled by cascading consoles, making it simple to move a console set-up file between CL models. Yamaha has also created file conversion software for file exchange between CL, PM5D, M7CL, and LS9 consoles.

There are three main processing levels to the CL Series. All channels feature four-band parametric EQ and two dynamics processors (one dynamic processor on outputs). On top of that is a central resource of the effects racks, 32 channels of graphic EQs, and a range of VCM EQs and dynamics.

VCM is a development tool and platform that models detailed characteristics of individual circuit components for realistic analogue circuit simulations. The first offerings in this category are Rupert Neve Designs-endorsed emulations for the Portico 5033 EQ and 5043 Compressor.

Yamaha has committed to Dante networking as standard in the CL Series I/O racks – the Rio3224-R and Rio1608-D. Up to eight I/O racks can be attached via Dante for up to 256 input sources, and two consoles can be cascaded for extra mixing capacity. Two or more consoles can share inputs from one set of I/O racks.

The console also has a number of additional software control options. CL Editor is Yamaha's standalone online/offline editor for Windows, and there is also a new version of StageMix for iPad. Additionally, CL consoles come with the new Steinberg Nuendo Live recording software.

£ **CL1: GB£10,924.66, CL3: GB£14,966.79, CL5: GB£20,210.63 (all exc. VAT)**
Ⓦ **www.yamahacommercialaudio.com**

CONCLUSION

Yamaha said: "Yamaha CL series digital mixing consoles represent a new level of refinement. They offer an evolved experience in accessible mixing, plus sonic purity with sound shaping capabilities that will give the most imaginative engineer unprecedented creative freedom. The CL series embodies the leading standards in live sound in their most advanced, most expressive form."

SOURCE
Audio Media May 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201205/

ADOBE AUDITION CS6

Digital Audio Workstation

A cross-platform editor that streamlines editing, mixing, and sound design for broadcast and video workflows.

Adobe has added lots of useful new features to Audition CS6, or in some cases, re-instated and upgraded popular features from older versions. These include a Media Browser that not only shows up the icon for various drives as they appear in the users OS (Windows or MacOS) but allows full previewing including auto-play and playback looping. Contents can be filtered and shortcuts added. The Grouping feature has the added ability to alter a set of grouped clips. In previous versions if a user wanted to remove one clip from a number than were grouped together, it involved Ungrouping, clicking on the one that was no longer wanted to deselect it, and then Grouping again. If the user clicked away and the clips were no longer selected, the process had to be started again.

It now works like this. Right click on the clip/sample wanted out of the group. Click 'Remove from Group'.

There is also a new feature called Suspend Group, which gives users the ability to change the order and shift ins and outs of a stack of grouped clips, and then lock them together once more with a simple command.

Audition CS6 now has a dedicated button on the transport controls for the Preview Edit function, which allows previewing of any edit on the either the Edit or Multitrack modes. There is also the Ripple Delete function that can cut whole chunks out of the Multitrack and close up the gap, even moving Marker. Professional standard CD creation has been added to this version, with the option to drag wav files into the CD pane or use markers laid out on the full mix.

Totally new features include Clip Stretching and Voice Align, which automatically syncs newly recorded dialogue with existing material.

£ **Adobe Audition £278 ex VAT.**
Upgrade from £59.57 ex VAT.
Subscribe from £14.29 ex VAT.
Also available as part of selected CS6 bundles.
Ⓦ **www.adobe.com**

CONCLUSION

For old users who held off upgrading it's now seriously worth taking a look. And for Mac users who've never used Audition before, there are more reasons that ever for trying out what has always been a hugely underrated DAW package.

SOURCE
Audio Media July 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201207/

Numerous improvements in the latest release from Avid.

AVID PRO TOOLS 10

Digital Audio Workstation

Pro Tools 10 comes in several versions, depending on the hardware which will be used. The 'base' Pro Tools 10 native software can be used with most audio interfaces and supports CoreAudio on the Mac (OSX 10.6 or 10.7) and AISO under Windows 7. The 10 HD version supports the HD series of hardware and the HD Native system. Pro Tools HD 10 offers what Avid describes as the 'premium software toolset'.

The most notable change from version 9 is that Pro Tools 10 HD increases voice count on HD Native to 256, and on HDX to 256 per card up to 768 with three HDX cards. If the interface in use has a built-in mixer, the new low latency software monitoring system can be used to reduce the delay inherent in native CPU processing when recording.

The Clip Gain feature gives Pro Tools the ability to adjust the relative levels of individual Clips on a track – and within the Clips themselves. These gain settings are exported via AFF and can be imported into other sessions as Clip groups. Clip gain settings can be converted into Automation data and vice versa.

Export enhancements include the ability to select tracks and export these as a new session. There are improvements to the import and export of session data, including options for volume automation. Files can now be shared directly from ProTools to Soundcloud or iTunes.

Another new feature is the ability to cope with multiple file formats in the same session and to directly handle stereo interleaved files without conversion. There is support for the RF64 format, and also for 32-bit floating point audio files.

One of the major new features of Pro Tools 10 is the new Avid Audio Extension (AAX) plug-in format. Currently, this runs in tandem with the TDM and RTAS plug-ins, but it's been designed to eventually replace and combine both into a single format.

£ **GB£449.00 (exc. VAT)**
Ⓦ **www.avid.com**

CONCLUSION

Whether the AAX plug-in format proves to be a game changer remains to be seen, but Pro Tools 10 indicates that Avid is not content to not only make the program useful in its natural environments of commercial recording and the TV and film arenas, but to move it out into the world as an all singing and dancing DAW. This latest update from Avid shows that there's plenty of life in Pro Tools yet.

Stephen Bennett

SOURCE
Audio Media December 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201112/

Focusrite provides high-class analogue channels and DAW control.

FOCUSRITE CONTROL 2802

Small Format DAW Controller And Console

The Control 2802 is an analogue mixer that can also be used as a summing mixer and DAW controller. The rear panel offers eight mic/line input channels with XLR sockets and quarter-inch TRS sockets.

Under the channel strip inputs are three female DB25 sockets for connecting eight summing/input channels, eight DAW inputs, and eight direct recording outputs. To the left are the Ethernet port, main and alternative monitoring outputs, two channels each of inputs for DAW mix, DAW foldback, and an extra external input – all on female XLRs. Under these are Aux, Cue, and Mix outputs on male XLRs, while quarter-inch TRS sockets provide two stereo effect returns inputs and outputs for the compressor, as well as separate left and right mix insert send and returns.

The front panel has the channel strips at the top and left, with eight motorised ALPS 100mm faders, right top is the monitoring section and buss compressor, while the DAW controls are tucked down on the right.

The Direct Output Routing section allows users to set the direct outputs to pre and post VCA fader and Mute or, alternatively, send a signal pre fader for control room monitoring duties. There's a second gain control on the Mic/Line or DAW input select section and a button that determines whether the channel insert is active or not alongside a separate Pan knob for the cue mixes. The Cue level control in conjunction with the Alt i/p button allows the summing inputs to be used to effectively add eight separate inputs to the desk, each with their own pan and level controls.

The 'Sel' button's function is determined by the Select mode in the master section. With a DAW, the button can be set to Group DAW tracks, Record enable, select channels, and set automation modes, while in the analogue domain, Solo can be set in place safe, Automation safe (which stops incoming automation data from the DAW affecting controlling the fader,) while the Unity setting sets the channel fader to odB.

£ **GB£3,499.00 (inc.VAT)**
Ⓦ **www.focusrite.com**

CONCLUSION

The analogue side of the Control 2802 is everything you've come to expect from such pedigree sources. The whole package feels solid and wouldn't be out of place in any professional environment – the whole signal path is just lovely with an audio bandwidth up to 120kHz. The monitoring and cue sections are comprehensive. As a summing mixer, or host for your favourite outboard preamps, it should provide anyone nervous of working 'in the box' with the sonic qualities they are used to from large format consoles.

Stephen Bennett

SOURCE
Audio Media July 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201107/

PRESONUS STUDIO ONE PROFESSIONAL

PreSonus updates Studio One.

DAW Software Package

PreSonus initially launched Studio One in 2009. The latest version is Studio One 2. New features include the integration of Celemony's Melodyne pitch correction tool, which analyses the pitch of the audio and allows manipulation and correction or alteration. The new Comping feature allows the merging of sections of multiple takes from a recording session into a new, single piece of audio. The new Track List shows all tracks currently in use in a session and lets users easily rename or move the tracks, and store presets. Folder Tracks allow multiple tracks to be kept together in one place. A buss can be created based on a folder track, and effects can be dragged and dropped into it.

The Video Window allows mixing to picture.

Mastering and Export takes place on the Project page, which has Loudness Detection to help match levels across different elements. Updates made in the Song page to songs already loaded are made automatically. Tracks can be split and then crossfade used to make the overall project a seamless flow of sound. The Project page allows for the creation of a DDP image, which creates a master CD for replication. Markers can be laid down for the tracks on any finished CD, and digital publishing is catered for with an Upload to SoundCloud button that allows users to include artwork images as part of the package.

Other version 2 updates include a new transient detection and editing functionality and groove editing.

£ Artist: GB£74.16, Producer: GB£132.50, Professional: GB£249.16 (all exc.VAT), Upgrades from GB£74.16

Ⓦ www.studioone.presonus.com/v2 / www.sourcedistribution.co.uk

CONCLUSION

I thought that Studio One was a nice bit of software when it launched, and I'm still of that opinion with this update. There are little touches that shine out, like the horizontal and vertical crosshairs that appear when you're drawing a fade envelope in the multi-track. These help you see where your fade is going much better.

It was always going to be brave move, introducing a new DAW to an already crowded market, but PreSonus clearly feels confident in its DAW. It has focused on the area it knows well – music production – rather than creating something that might appeal to a wider audience but that might take it out of its area of expertise. I'd say that's paid off.

Jerry Ibbotson

SOURCE

Audio Media January 2012

DIGITAL EDITION

nxtbook.com/nxtbooks/newbay/audiomedia_201201/

SMART AV TANGO 2

The new DAW controller from Tango is an ergonomic hit.

Digital Audio Workstation Controller

The Smart AV Tango 2 Digital Audio Workstation controller is a hardware upgrade from the original Tango. Similar physically to its predecessor, the Tango 2 has a 22-inch 16:9 touchscreen in the centre console, housed in a sturdy sloping surface above a bank of eight touch sensitive faders. Above each of the faders is another programmable encoder along with mute, solo, and Smart AV's unique 'Inject' buttons. The latter work in conjunction with the console's ARC technology to assign various desired parameters to the selected channel. The 16 notched touch sensitive encoders to the right of the screen are automatically assigned to various parameters when an on-screen control is touched. The touchscreen itself extends each channel's controls and display upwards depending on what has been selected. Across the top of the screen is the MonARC, which allows users to display up to 100 channels in compact mode. Dedicated transport controls are just above the mouse pad, and the Tango 2 has a pull-out shelf that can accommodate a modern narrow Mac or PC keyboard.

Tango 2 connects with the host computer via standard CAT5e cable. DAWs directly supported to date are Steinberg's Nuendo and Cubase, Pyramix, Apple's Logic Pro and Final Cut Pro, Vegas Pro, Digital Performer 7, and Pro-Tools – though Avid's flagship is controlled via a HUI emulation only

£ GB£7,700.00 (exc. VAT)

Ⓦ www.smartav.net / www.emerginguk.com

CONCLUSION

As more high end users in the post and film world move into the box, the use of a DAW controller such as the Tango 2 is becoming an essential addition to the studio.

The combination of instant recall and ergonomic loveliness that the Tango 2 presents to the engineer really makes working with a computer (almost) a pleasant experience. For the commercial recording studio, be it project or high end, having something as impressive and imposing as the Tango 2 sitting in the centre of your control room could mean the difference between getting the gig or not – never mind the fact that the thing is actually extremely useful in day to day workflow.

Stephen Bennett

SOURCE

Audio Media March 2012

DIGITAL EDITION

nxtbook.com/nxtbooks/newbay/audiomedia_201203/

A Nuendo update with a raft of new features.

STEINBERG NUENDO 5.5

DAW Software

Version 5.5 of Steinberg's flagship DAW software Nuendo has many new features, and brings it into line with the features found in its main competitors.

The comping feature creates separate lane tracks under each other when recording in cycle mode. The audio on each of these lanes can be split, dragged, and resized, and the selected parts are added to the master comp track. Each separate lane track can be solo'ed – a simple way to audition and create a comp track quickly. Both audio and MIDI data can be 'laned'.

Another new feature is the multi-track quantisation facility available when using the Group-editing mode. Once grouped, tracks can be made to conform to the tempo of a chosen track, without phase issues. Other editing actions such as resizing affect all grouped events, parts, or selection ranges.

The tempo detection feature can be used on any audio material with detectable beats and will generate a tempo track map for material that hasn't been recorded to a click. Other audio can then be conformed to this map using the audio quantisation feature.

Nuendo 5.5 now has an audio replacement features that allows users to replace or enhance recorded audio. Transient detection algorithms place indicators on a track and the user clicks on the MIDI note button to create data to be used by an external synth, sampler, or plug-in instrument.

Time and tempo processing has been improved in this latest version of Nuendo. Zplane's élastique pro time and pitch shift algorithms are available, as is an alternative algorithm, MPEX, and a 'Standard' mode for use in various applications, for instance when using Nuendo's VariAudio.

Improvements have also been made to the kind of data that can be displayed on folder tracks, and there is improved compatibility when exporting to other DAWs. Automation has been improved as has offline processing of audio. The software supports 64-bit operation in OSX.

£ **Nuendo 5 – GB£1,531.00 (inc. VAT)**
Ⓦ **www.steinberg.net**

CONCLUSION

Some of the improvements in version 5.5 of Nuendo are incremental while some, such as lane comping, are game changing. The program has lost none of its speed and stability.

For version 5 users, the upgrade is a no-brainer. For those thinking of dipping into Steinberg's flagship, I think there's been no better time to do it than with version 5.5.

Stephen Bennett

SOURCE

Audio Media March 2012

DIGITAL EDITION

nxtbook.com/nxtbooks/newbay/audiomedia_201203/

HEADPHONES

A top-of-the-range offering from Sennheiser.

SENNHEISER HD800

Professional Open-backed Studio Headphones

The previous top models from Sennheiser were the HD600s and the HD650s, often found in the classical music world where high degrees of neutrality are required. The 650 was very much an evolution of the 600. The Sennheiser HD 800 headphones, however, are a completely new design. They have totally new diaphragms, which Sennheiser claims are the biggest of any currently available headphones. Dynamic 56mm transducers produce clear sound. Specially-designed, four-wire, high-performance connectors with Teflon insulation are on the cable inputs into the drivers. The cable itself features Kevlar and OFC copper. It is supplied with a quarter-inch jack. The ear pads are handcrafted from a high-quality microfibre fabric. The headband and headphone mounting are inspired by the latest development in aerospace technology. An extremely stable, high-tech plastic with excellent damping properties ensures that vibrations are not felt on the headphone support.

They are open-backed, circum-aural dynamic stereo headphones, and Sennheiser says that "no other manufacturer has been able to come as close as the HD800 in replicating the basic acoustic conditions of natural hearing."

Stylistically they are large, silver and black, with uncovered earcups.

£ **GB£999.00 (Inc. VAT)**
Ⓦ **www.hd800.co.uk / www.kmraudio.com**

CONCLUSION

So what do they sound like? Fantastic. Detailed, articulate, unfatiguing, and able to square the circle of delivering high quality monitoring without being at all tiring. Neutrality and listenability in one package.

I have some very good headphones from beyerdynamic, Audio-Technica, and Ultrasone – they cost from a hundred pounds to about two fifty. They do the job and are a pleasure to use, but these Sennheisers are better. Are the HD 800s the best headphones I've ever heard? Well, I remember back in the mists loving the Stax Sigma electrostatics. I quickly checked the net – the latest model the Omega runs out at fifteen hundred pounds, or three thousand if you want an amp you can actually plug them into. Which makes HD 800s a bargain.

Alistair McGhee

SOURCE

Audio Media June 2011

DIGITAL EDITION

nxtbook.com/nxtbooks/newbay/audiomedia_201106/

ULTRASONE SIGNATURE PRO

High quality headphones from Ultrasone.

Professional Closed-back Headphones

Ultrasone's Signature PRO headphones are inspired by its Edition range. A lot of the technology is the same or similar, but they are repackaged in a more robust, studio-friendly design. The newly-developed black PRO headphones have a new headband and comfortable ear pads, made from leather from Ethiopian long-haired sheep and sewn by hand. Ultrasone claims that this exclusive leather provides long-lasting quality, a snug fit, and outstanding insulation. The Signature PROs come with a detachable cable with a B-Lock connector at the headphone end. Users are supplied with two cables – a long 3m and short 1.5m.

The Signature PROs use the same S-Logic technology as the Edition series headphones – described as a "Natural Surround Sound System" by Ultrasone. The technology uses decentralised driver positioning. Instead of hitting the inner ear directly, the signals are reflected off the outer ear in different directions before entering the auditory canal to create a natural three-dimensional sound. This also allows a reduction of sound pressure levels at the eardrum by up to 40%, reducing the risk of hearing damage and allowing longer listening without fatigue.

Ultrasone also use its patented ULE technology in the headphones, which protects against electromagnetic radiation using MU metal.

£ GB£749.00 (inc.VAT)

Ⓦ www.ultrasone.com / www.synthax.co.uk

CONCLUSION

They're expensive but not flashy, but what do they sound like? Brilliant. Every time I put them on I end up listening, if you know what I mean... The bottom end is as secure as money in the bank. Actually a lot more secure than money in the bank... The mid and top provide a wealth of detail and that elusive monitoring experience of revealing things that you can hear on lesser systems, but don't notice until something like the Signature Pros shine a light in the dark places. The Ultrasones do not smooth the top end away... I wondered if the top end would intrude with extensive listening, but it didn't. They fit snugly and are comfortable for long periods, and are solid enough to take on the road.

Alistair McGhee

SOURCE
Audio Media February 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201202/

In 1987 Focusrite, then owned by Mr Rupert Neve, introduced the ISA 110 wide bandwidth Microphone preamplifier and EQ module, designed at the request of Beatles producer Sir George Martin for the custom Neve consoles at his AIR Studios in London and Montserrat.

Like all ISA Range products ISA Two specs out beautifully!

- EIN is -127dB (at 60dB gain, 150 Ohm source impedance).
- Noise at main output is -97 dBu (22Hz-22kHz bandpass filter).
- Frequency response at 60dB gain -2.5dB at 20Hz., -3dB at 120kHz.

This was the genesis of the Focusrite brand and an uninterrupted progression of the ISA family from then until now. The ISA (Input Signal Amplifier) microphone preamplifier, featuring a Lundahl input transformer and proprietary Zobel network, has remained essentially unchanged and at the heart of every ISA Range product and of course the famous Focusrite Studio consoles.

Announcing the latest chapter in the ISA legacy, ISA Two.

Responding to numerous requests Focusrite is pleased to offer two channels of this highly praised mic pre in a 1U, 19" rack-mounted format. The only things we've added to the original design are four switchable input impedances, balanced inserts and two useful user-calibrated eight LED output meters.

At the heart of every great studio is great sound. That will be your legacy.
It's ours too - Sound is Everything.

Focusrite®

A smart-phone-sized alternative to the big boys in metering.

RTW TM3

Touchscreen Audio Meter

The TM3 from RTW is a small alternative to the larger, squarer, monitor units available from the main metering hardware manufacturers. There are several parts to the system – power lead, break-out box, and display. The display is a compact touch screen housed in a free-standing frame. A single cable from this unit connects to the break-out box where RCA analogue LR in, stereo SPDIF I/O, USB, GPIO (preset recall), DC power in, display, and 25-way D-Sub converge. There are also analogue LR reference level preset pots accessible through panel holes. For those with the six-channel upgrade to the TM3, there is also a break-out cable for the D-Sub, giving balanced stereo analogue in, and six channels of AES digital I/O.

All set-up for the TM3 is done with the Devicer DC1 software, supplied with the unit. This will run under Mac OS or Windows. Controls on the unit are limited to preset selection and a swipe system to determine orientation. There are no menus or preference screens hidden in the unit itself. The Devicer DC1 software finds your USB-connected TM3 then presents a comprehensive set of tools for customising the unit, and creating and editing configurations and presets.

Loudness modes for the TM3 are EBU R128, ITU-R BS.1771, ATSC A/85, and ARIB, plus 'consumer specific', which allows complete customisation of the loudness parameters: Program meter (level and/or loudness, Loudness Sum (momentary, short term, and integrated), LRA (Loudness Range), Loudness Number (numerical momentary, short term, integrated, and LRA), and Correlator (phase).

£ **TM3-6CH: GB£1,545.00, TM3: GB£1,130.00, TM3-Solo: GB£1,035.00 (exc. VAT)**

CONCLUSION

The TM3 is eminently suited to the desktop. Its slick form, including the interface box, looks the part next to a DAW or edit system. There aren't any specific mounting options where a console is involved, though any flat surface will do, so maybe the meter bridge or a blank panel section will do the trick.

The graphics are high-res and responsive, and the set-up options are numerous and deep – and those have to be the big considerations when choosing a meter. The TM3 is probably best suited to desktops, both in audio-only or audio/video suites, or for small footprint DAW set-ups where the operator doesn't need to be refining metering mid-mix – he or she simply needs a standard data sets according to workload.

Paul Mac

SOURCE
Audio Media May 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201205/

RTW and TC Electronic combine their talents to bring out the TouchMonitor.

RTW/TC ELECTRONIC TOUCHMONITOR

Touchscreen Audio Meter

The TouchMonitor TM9 and TM7 (identical systems featuring nine- and seven-inch touch screens, respectively) are available under both the RTW and TC Electronic brands. The standard TM9 TouchMonitor includes a nine-inch 16:9 TFT touch screen (1024 x 600 pixel) mounted into a rugged tabletop frame with a moveable table stand. Alternatively, the unit can be purchased as an OEM version (without the casing) so it can be mounted directly into a rack panel or console. There are various I/O options, which include combinations of analogue, AES3, AES3, and SDI; and the unit can simultaneously input and display up to 32 audio channels. The TM7 TouchMonitor is also available as a 19-inch 3U rack mountable version and as a video rack-mountable version. The TouchMonitor's connectors include Ethernet, VGA, USB 2.0 (x 2), GPIO, and 24 V DC. The machine incorporates a modular software approach for flexible configuration and easy upgrades.

The basic TouchMonitor system includes two-channel Stereo-PPM software including Peak, True Peak, and Phase Metering. It supports both analogue scales (DIN5, Nordic, British IIa, British IIb) and digital scales (0 to -60dB, +3 to -60dB TruePeak, DIN5, Nordic, British IIa and IIb) and includes peak hold, peak memory, and over indicators. Licenses can be purchased for multi-channel processing, loudness (ATSC A/85, EBU R128, ITU-BS.1771) and SPL, RTA (Real Time Analyser), SSA (Surround Sound Analyser), Radar Display, and Premium PPM plus Vectorscope.

The TC-branded TouchMonitor comes with the Loudness and SPL option. The unit can display two selected instruments at the same time.

When operating in multi-channel mode, the signal routing is expanded from stereo to mono, 3.1 surround, 5.0 surround, 5.1 surround, and/or multi-channel (two to eight channels in one block, up to four blocks with 3G SDI option).

The RTA provides either 31 or 61 bands of frequency response in channel pairs or groups. The Surround Sound Analyser provides a dynamic display that allows the user to visualise the interaction of all surround or stereo sound parameters, and the Radar Display provides a high-resolution circular Loudness display via the TC Electronic protocol.

The TouchMonitor's GUI is controlled entirely by touching a finger on the touchscreen. There is no need for an external keyboard or mouse (although one can be used if preferred).

£ **TM7: GB£2,735.00 (ex. VAT), TM9: GB£3010.00 (ex. VAT)**

CONCLUSION

The TC/RTW TouchMonitor is an amazing tool that allows the mixer to visually confirm precise details about their mix, confirming that it meets whatever delivery specs are required.

Russ Long

SOURCE
Audio Media December 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201112/

AKG DMS700

A flexible, affordable wireless microphone system.

Digital Wireless Microphone

AKG has augmented its top end product – with professionally focused 700 series – with the DMS70 system. The DMS70 series is available in handheld and body pack transmitters, and works at 2.4GHZ – and is therefore exempt from any license requirement. Audio is transmitted over a 24-bit uncompressed link using orthogonal frequency division multiplex, and has 128-bit encryption. The DHT 70 hand held transmitter is powered by two AA batteries, and AKG claim the battery life is between six and seven hours continuous working. The Quattro kit comes with an AKG D5 capsule in the microphone, while the Dual kit has a Perception capsule. There is a status LED in the middle of the body of the mic, plus an 'on' switch on the bottom face alongside the antenna stub. In the battery compartment there are a couple of extra controls: the connect button, which is used to assign the mic to a channel on the receiver and to check that assignment in use, and also a gain switch with high and low settings.

The Quattro receiver has four receive channels, and provides individual balanced XLR outputs and also offers a combined output. Two Quattro systems can be combined for eight channels. There are gain controls for each channel, which control both the individual gain of the channel and its contribution to the mixed output. Three info LEDs display connection status, transmitter battery information, and audio clipping. There is a three position switch on the receiver that offers 'Auto Correction' of outside wireless interference.

£ **GB£599.00**
Ⓦ **www.akg.com / www.soundtech.co.uk**

CONCLUSION

If your rack is full of wireless routers and 2.4GHz access points this will not work for you. However, just having a few wireless networks 'in the air' as it were doesn't seem to be a problem, and if you can guarantee, say, a five metre exclusion zone for other 2.4G transmitters round the receiver, this is a very attractive system. It sounds great, it's cheap, flexible, and easy to use; and expandable if you need more capacity later.

Alistair McGhee

SOURCE
Audio Media April 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201204/

AUDIO-TECHNICA AT2022

An affordable microphone that doesn't compromise on quality.

Stereo Condenser Microphone

The Audio Technica AT2022 is a stereo condenser microphone in a single-body package. The entire microphone is 9.5 ounces and 7.5 inches long, with one end of the narrow body sprouting a pair of cardioid capsules arranged in an XY configuration. The angle between these two capsules can be altered to either 90 or 120 degrees on a swivel mount. The mount clicks into place at each angle and the capsules are decoupled from the mount with rubber, helping to absorb jolts and knocks. For storage and transportation purposes, the two capsules can be folded down flat.

The body of the Audio Technica AT2022 unscrews to expose the battery compartment. A single AA battery powers the mic, which has an on/off switch on the body. As well as turning on the power for the AT2022, this switch can also engage a high pass filter with the turnover frequency fixed at 150Hz with a 6dB/octave slope.

The base of the Audio Technica AT2022 terminates in a standard three-pin XLR connector, but it is an unbalanced output with pins 2 and 3 carrying signals, with pin 1 common.

The AT2022 is designed to be used with DSLR and Flash camcorders with full HD capability, and is supplied with a short cable that converts the XLR connector to a mini jack. It is also supplied with a padded microphone case and clip, and a windshield. The windshield makes no significant changes to the frequency response of the AT2022.

CONCLUSION

The Audio Technica AT2022 is a well designed and solidly built, great value for money solution for achieving increased audio quality and capture flexibility with a variety of portable audio and visual capture devices.

Simon Tillbrook

£ **GB£249.00**
Ⓦ **www.audio-technica.com**

SOURCE
Audio Media November 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201111/

A mix-and-match multi-purpose toolkit from DPA.

DPA REFERENCE STANDARD SERIES

Component Capsules & Pre-Amps

DPA's Reference Standard range provides a selection of capsules and pre-amps that can be used in almost any situation. It is possible to buy all the components but the 'normal' way of buying them is as specific microphones, supplied as a pairing of capsule and pre-amp. DPA has available a grid of combinations, most of which are available off the shelf while others are available to order. This means that the 4006a is the modular equivalent of the existing 4006, the 4011a the modular version of the 4011, etc. The existing models are still available, but buying as capsule/pre-amp combinations gives users the building blocks for a flexible collection of component parts.

There are three pre-amps in the new range. The MMP-A represents the established microphone line, and in conjunction with the 4000 series capsules produces the range of full-size microphones. The dimensions and supported accessories are the same as the all-in-one models, and the performance specs are very similar. The other general-purpose pre-amp is the very small MMP-C. The other is the MMC-B, which has two visible switches on the outside of the body, one for low cut and one for high boost. This capsule is primarily, though not exclusively, intended for use with the shotgun capsule.

The 4006 capsule has full compatibility with the existing range of 4006 accessories, and comes with the same set of three grilles for working at different distances and in different environments. The 4006A is, apart from a very few spec detail differences, identical to the 4006-TL. This is also true of the 4011 cardioid capsule, which when mounted on the MMC-A pre-amp provides a microphone virtually indistinguishable from the original. The 4015 wide cardioid, or hemispherical, capsule and the 4017 shotgun complete the 4000 subset of the new capsules. There are also two twin diaphragm capsules; these use two capsules from the miniature range, configured to provide the bandwidth and impulse response advantages of the small diaphragm together with the noise level improvement that an overall larger diaphragm area produces. The MMC2006 is an omni, and the MMC2011 is a cardioid.

£ From GB£595.00-1,535.00 (exc. VAT)
Ⓦ www.dpamicrophones.com / www.soundnetwork.co.uk

CONCLUSION

It's fair to say that everything we've done with the Reference Standard microphones since they arrived, in the studio and on stage, has impressed hugely. The flexibility the range offers, together with the inherent DPA quality, makes this a highly desirable toolkit. DPA clearly sees this range as opening new doors, and on this showing there's no doubt that that will happen.

Dave Foster

SOURCE
Audio Media November 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201111/

Rode's impressive large shotgun.

RØDE NTG8

Broadcast RF-Bias Shotgun Microphone

The Rode NTG8 is 56cm long, with a smooth matt-black finish and gold plated XLR pins. It comes with an aluminium storage cylinder which is padded inside to keep the microphone safe and dry while on the move. It also comes supplied with a foam windshield and a shock mount. The mount is designed so that the microphone's angle can be adjusted, and then clamped into place.

The NTG8 has a maximum SPL of 124dB. It exhibits increased directionality across a wide frequency response range, making it a a useful microphone for film, television, sports and outdoor broadcasting, live performance, and any professional distance miking application. The overall frequency range is 40Hz to 20kHz; at 4kHz only about 15 degrees either side of the centre line is picked up.

It is based on Rode's NTG3, and like that model features low self-noise and RF bias technology. Rode say that it offers 'natural sound without colouration' both on and off-axis, and that it is almost completely resistant to high humidity environments which could cause other condenser microphones to fail.

£ GB£774.17 (exc. VAT)
Ⓦ www.rodemic.com / www.sourcedistribution.co.uk

CONCLUSION

This is an impressive mic. If used outside it could do with a proper windshield, or at the very least some filtering to get rid of the bottom end noise. But that's something that would afflict any mic in this situation and they wouldn't be pinpointing distant sounds with such precision.

Good build quality, great to use and excellent audio quality. Oh, what a beauty.

Jerry Ibbotson

SOURCE
Audio Media April 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201204/

SE ELECTRONICS RN17

Condenser Microphone

A small microphone that can become a whole new range of microphones...

Rupert Neve and sE Electronics have created a small condenser microphone, the RN17, with interchangeable capsules for different applications and polar patterns, creating, in effect, a completely new range of microphones. The complete stereo kit comes in a case which has the two microphone in their own wooden box, and each capsule in a small metal tube and with two shock mounts.

The cardioid capsules are linear up to 22kHz, with a peak between 7-11kHz, and useful response up to 24kHz. There is also a hyper-cardioid, which is linear to 18kHz and has useful response to 25kHz. The omni capsule is linear to 18kHz, and continues to have some useful frequency response up to 27kHz. The figure of eight is linear to 16kHz and drops off at 20kHz.

£ GB£949.00 (exc. VAT)
Ⓦ www.seelectronics.com

CONCLUSION

The RN17 gives the user a clean sound in a way that is almost shocking. This does not hit you at first and you may even be tempted to think that they lack top end – but when you work these mics with a good EQ, you get to hear just how pure the output really is.

All the capsules showed excellent bass response, giving a lie to the mistaken belief that small diaphragm mics can't do bass.

You only really know if a microphone is any good or not, when it comes to mixing and in particular, when you start throwing EQ around the place. Those sparkling highs from some microphones that impress so easily on first listen can refuse to sit in the mix and may even start to 'spit' when boosted. The RN17 sounds neutral and you might even think that it is without character – until you start to twiddle knobs and push faders. Then you get all the character you want.

Andrew Graeme

SOURCE
Audio Media July 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201107/

SENNHEISER MK4

Studio Condenser Microphone

A small-price-big-noise microphone.

The MK 4 is Sennheiser's first large-diaphragm, side-address microphone. The company says that it's aimed at 'professional users in large studios', but is also at home on stage. It features a one-inch, 24-carat gold-plated diaphragm true condenser capsule based on the acoustics of the e 965 high-end vocal mic, optimised for recording. The capsule is shock-mounted internally to minimise structure-borne noise. The maximum SPL is 140dB and it has a self-noise level of 10dB. It comes with a travel pouch and a plastic mic clip to attach it to a stand. The MK 4 is made in Germany, its transducer being manufactured in the same clean room as all high-end Sennheiser condenser capsules. It has a frequency response of 20Hz to 20kHz, a maximum Sound Pressure Level (SPL) rating of 140dB, and a dynamic range of 130dB

The MK4 weighs 485g and is 160mm long and 57mm deep. The microphone comes with the MZQ 4 microphone clamp, a soft pouch, and the instruction manual.

£ GB£299.00 (inc. VAT)
Ⓦ www.sennheiser.co.uk

CONCLUSION

A microphone like this is likely to be used in a range of ways, so I tested it in a number of different scenarios... the Mk4 is a great bit of hardware. It's at least as good as anything else out there for that price.

Jerry Ibbotson

SOURCE
Audio Media July 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201107/

A ribbon tweeter monitor to win over ribbon sceptics.

ADAM A77X

Active Near-Field Monitor

ADAM's 'Extended Accelerating Ribbon Technology' (X-ART) is used in every one of its full-range speakers. In simple terms it's a pleated ribbon that, rather than moving in and out like a conventional diaphragm, compresses and stretches those pleats laterally – something like an accordion – drawing air in and squeezing it between its folds. Adam states that this "Overcomes the piston-like motion of all conventional drivers and their inevitable problems." It says that X-ART offers a greater effective surface area (improving dynamic range), fast cooling, and improved HF response.

The A77X is part of the company's AX series and features the X-ART tweeter. These are large active near-field speakers configurable for both horizontal and vertical mounting. The individual drive units are powered by their own amplifier, a 50W A/B amp for the X-ART tweeter and a 100W PWM amp for each of the bass/mid-range units – of which there are two per speaker.

The two seven-inch drivers, while ostensibly identical, perform different tasks in the A77X. Both are responsible for the sub-bass frequencies, but only one covers the mid-range – ADAM says that this prevents interferences between the two drivers. The X in the X-ART ribbon tweeter indicates that the frequency range has been extended up to 50kHz, and ADAM also claims higher efficiency at greater Sound Pressure Levels (SPL) for the driver. The A77X is port loaded with two large bass ports dominating the lower centre of the speaker. The front panel of the A77X features an on/off switch and a level control that remembers its setting on power down. The rear panel has an IEC mains connector, XLR signal input, and screwdriver-adjustable mini potentiometers that allow for some adjustment of the tonal characteristics of the speakers.

£ GB£1,949.00 (inc.VAT)
Ⓦ www.adam-audio.com

CONCLUSION

If your prejudice is that ribbon tweeters usually sound harsh and seemingly dissociated from the other drivers in the cabinet, the A77X might come as somewhat of a surprise.

ADAM has taken its popular A7X designs and improved on it tremendously. The company should be applauded for continuing to provide an alternative to the plethora of soft and hard domed tweeter based speakers out there.

I like the A77X a lot and they make a refreshing change from the usual mid-priced near-field speakers.

Stephen Bennett

SOURCE
Audio Media February 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201202/

Angled monitors designed specifically for desktop use

DYNAUDIO DBM50

Powered Studio Monitors

These are fairly big speakers - bigger than you might be expecting: 335mm high to be precise. That puts them on a par with many compact studio speakers that you'd happily put on stands or even soffit mount. But what makes the DBM50s special is the angled front face. It's tilted upwards, directing the 28mm tweeter and 180mm at the user's ears. The idea is that they can be placed directly on the desktop or working surface.

The basics of the DBM-50 are: 50 Watts of power each to tweeter and woofer, frequency response from 46Hz to 21KHz, 1.5kHz crossover frequency, an MDF cabinet, XLR balanced and RCA unbalanced inputs. On rear of each speaker are the inputs and switches for a range of controls. There's an input level selector (+4dB and -10dB), a high-pass setting for those using a separate sub, an LF boost/cut, an MF cut, and an HF boost/cut. These allow for simple adjustments according to environment; for example, dialling back the bass if they're placed close to a wall. The monitor has a Sleep Mode switch, which puts the speakers in power-saving mode if there's no input signal for twenty minutes.

£ Dynaudio DBM50 £405 + VAT
Ⓦ www.dynaudioprofessional.com

CONCLUSION

"Maybe a set of normal right-angled speakers could do the same job, but you'd have to mount them either angled, or high enough for alignment with the ears - an issue that ruins many desktop monitoring situations, though does offer a useful existence for those encyclopaedia volumes. My own Genelecs have a rubber base that lets you tilt them upwards, but this is not a common facility.

I can imagine a lot of scenarios where the DBM50s would be of great use. If you were editing video and needed excellent sound reproduction, these could be just the thing. Small voice studios and radio production environments could also put them to great use.

But they are truly cracking speakers and should definitely be on your short-list. Just make sure your desk is big enough."

Jerry Ibbotson

SOURCE
Audio Media July 2012, page 28

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201106/

FOCAL SM9

A bold departure in mid-field monitoring.

Active Monitor

The Focal active studio monitor weighs in at 35kg, with 600W of amplification on board (400w for low frequencies and 100w each for mid and high) plus power supplies, transducers, and a hefty cabinet. The cabinet has four drivers: an inverted dome tweeter, 16.5 and 20cm mid and low drivers and a 27cm (11-inch) passive radiator. This last has some correspondence with a conventional ported reflex design but avoids port noise or 'chuffing', and in this case also contributes to the lower end of a 30Hz to 40kHz frequency response.

The SM9 has a 'watermarked' pattern on the upper surface. There's a tri-colour LED on the front panel, green in normal use but capable of displaying other statuses; to the side at the tweeter end is a panel with an LED mirroring that on the front, together with three switches, Standby/On, Focus, and Direct Input.

Focus switches the system over to two-way mode, bypassing the two LF drivers and reconfiguring the crossover so that the mid driver handles all the lower frequencies. Frequency response then becomes 90Hz-20kHz: the tweeter's highest frequency is reduced by an octave, for a more realistic voicing similar to that of a dedicated smaller loudspeaker.

The back panel is mostly taken up with a large finned heatsink for the amplifiers, and in addition to a mains inlet and XLR input with both 'semi-pro' and 'pro' sensitivities are EQ controls to help match the speaker to different rooms, bypassed with the Direct Input switch on the side.

The EQ has high and low shelves and three mid-range adjustments, all plus or minus 3dB in 0.5dB steps, together with a high-pass filter.

£ GB£4,190.00 (exc. VAT) per pair
Ⓦ www.focalprofessional.com / www.scvlondon.co.uk

CONCLUSION

The Focal SM9 is a fine recording and mixing monitor, and the Focus mode makes it even more useful in that context. It is certainly a bold and effective departure in mid-field monitoring, and I don't think it'll be long before the SM9 becomes a common sight in audio workplaces.

Nigel Palmer

SOURCE
Audio Media June 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201206/

KRK SYSTEMS 12SHO

KRK's adaptable sub can work in almost any room.

Powered Subwoofer

The KRK 12sHO subwoofer is one of KRK's initial product releases since it became part of the new Gibson Pro Audio division earlier this year. The 12sHO is a 400-watt powered subwoofer, measuring 20 x 22 x 22.5 inches and weighing 109.7lbs. It features a 12-inch high-excursion woven Kevlar driver cone. The driver is set in a 'curved baffle' front plate designed to minimise diffraction distortion.

The integrated Class A-B power amplifier delivers 400-watt RMS performance, yielding a sound pressure level of 123dB peak, a signal to noise ratio of 92dB, and a frequency range of 29 Hz – 160 Hz. The cabinet features combi-jack balanced inputs that accept either quarter-inch TRS or male XLR connectors, and balanced outputs on XLRs (hi-passed or full-range depending on foot switch).

The 12sHO has a continuously variable input sensitivity control ranging from -30dB to +6dB, a 24dB/octave LPF control adjustable from 60 Hz to 160 Hz. The Polarity switch can be set to either 0 or 180 degrees along with a continuously variable phase adjustment.

The box offers a switchable limiter for component protection and a ground lift switch to assure noise-free implementation. There is a power switch, and the AC Input Voltage Selector sets the operating voltage to either 110V-120V or 220V-240V.

Typical studio set-up for the 12sHO requires running the console's monitor output into the 12sHO's left and right inputs, and then patching the left and right outputs (thus utilising the 12sHO's built-in high-pass filter) into the amplifier or, in the event of active monitoring, directly into the speakers. Alternatively, a subwoofer (LFE) output can be patched directly into the 12sHO's LFE input for integration into a surround set-up that requires this signal.

The Bypass Footswitch Control allows a standard-latching quarter-inch mono footswitch to bypass the sub and provide full-range audio to be provided to the mains. The included footswitch has an LED that illuminates when the sub is active.

£ GB£1,559.99 (inc. VAT)
Ⓦ www.krksys.com / www.focusrite.com

CONCLUSION

The KRK 12sHO subwoofer is a very powerful and wonderful sounding unit, and should be given top consideration by anyone in need of a reference quality sub.

Russ Long

SOURCE
Audio Media May 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201205/

A monitor remarkable for its unremarkable sound.

NEUMANN KH 120

Active Studio Monitor

The Neumann KH 120 studio monitor is designed for use as a near-field loudspeaker or as a rear loudspeaker in larger multi-channel systems. It comes in analogue and digital versions ('A' and 'D suffixes). The cabinet itself is a 6.5 litre painted aluminium design. It has a one-piece front panel with built-in waveguide and ports, with no discontinuities for reduced diffraction and smoother frequency response. It offers a composite sandwich cone and a long throw bass driver; plus an Elliptical Mathematically Modelled Dispersion (MMD) design, which is apparently more forgiving of diverse acoustical environments. The 5.25-inch bass driver and 1-inch titanium/fabric dome tweeter split via the active fourth order crossover at 2kHz, each powered with their own thermally protected 50W (continuous) class A/B amps.

On the back are four-position bass, low-mid, and treble acoustical controls, and wide range input gain and output level controls. The analogue version has a balanced input on XLR while the digital version (KH 120 D) has a 24/192 DAC with digital A, B, and A+B switching. Maximum SPL is 111.1 dB at 1 m (3% distortion) and it's pass band frequency response is 52Hz - 21kHz (-3 dB). Neumann states among the main benefits of the KH120 that any KH 120 is "pairmatched" to any other KH 120 – implying enviable manufacturing tolerances and quality control. There are also a range of optional mounting accessories to complement the cabinet's MB thread, including floor stand, mic stand, meter bridge, wall, ceiling, truss, omnimount, and VESA possibilities – plus flightcase and soft case products.

£ **€587.00 (exc. VAT)**
Ⓦ **www.neumann.com**

CONCLUSION

In the KH120s Neumann has delivered neutrality that makes not just a great speaker, but a great monitor. There are less expensive monitors, and certainly bigger ones, for your money. But then size isn't everything.

Alistair McGhee

SOURCE
Audio Media May 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201105/

PMC's active version of the IB2.

PMC IB2S XBD-ACTIVE

Compact Active Reference Monitor

The IB2S XBD-A cabinet is the full-range component of the system, largely similar to the passive version and with the same three-driver complement. It has a fibre pad adjacent to the MF and HF drivers, which makes the cabinet acoustically as narrow as possible at that point to reduce interference; round the back there are both analogue and digital (AES) inputs and sockets for cabinet linking. Internally, everything is digital until the 4kW of power amplifiers in a full system: if an analogue input is chosen, it will be converted into digital for level, EQ and crossover control, and then back to analogue for amplification.

The bass extension cabinets are not sub-woofers in the conventional sense but are a means of spreading the bass load in a room when combined with the similarly shaped full-range cabinets – the bass boxes contain the same LF driver and amplification as the full-range, and have the same LF frequency response.

£ **IB2S XBD-A: GB£27,995.00 (exc.VAT), IB2S-A: GB£15,995.00 (exc. VAT)**
Ⓦ **www.pmc-speakers.com**

CONCLUSION

I've never been able to hear into the lows and low mids better than with this system, and I could identify and fix bass issues my usual speakers might not alert me to.

Although the system cost may be eye-watering compared to other good loudspeakers, I'm going to stick my neck out and say that in my opinion these PMCs still represent value for money of a kind: they may be well beyond any speaker budget I'm likely to have access to, but their performance is quite extraordinarily good in a matter-of-fact unhyped way, while remaining immensely listenable.

In audio, you can't correct what you can't hear. With a set of these and a room to match you're going to get about the best possible chance to do that within the constraints of human hearing, and I believe that PMC in the IB2S XBD-A has succeeded handsomely in its quest to make an ultimate no-compromise monitor for the mid-field.

Nigel Palmer

SOURCE
Audio Media January 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201201/

SE ELECTRONICS EGG 150

A cracking monitor from sE Electronics.

Active Integrated Monitoring System

The sE Egg 150 Active Integrated Monitoring System (AIMS) is the first in a series of egg-shaped sound-radiating systems, currently planned to number three. The Egg system was conceived, designed, and built as a collaboration between Andy Munro (Munro Acoustics), and Siwei Zou and James Ishmaev-Young (sE Electronics). sE Electronics, after the success of its Rupert Neve collaboration, approached Munro about collaborating on some sE monitors, and the partnership was born.

The design means that it has a cabinet free of interfering resonances that also presents minimal interference to radiation patterns. Together with carefully designed electronics, Egg is Munro's and sE's offering in the category of neutral, accurate, professional monitoring. While the system is active and bi-amped, the electronics have been kept out of the actual cabinets.

The cabinets themselves are the results of six months of computer aided design, prototyping, and materials science, and each houses the drivers, a Speakon connector, and a recessed blue LED around the front. To get the sweet spot sorted, the user angles the monitors until the LEDs seem at their brightest, they are then in the optimum position and you can then turn the LED off with a switch at the back of the amp.

The system comes with two high-quality three-metre Speakon cables. Further to that, the left and right channels are matched to left and right speakers, which are labelled as such around the back and on their respective packaging. The on/off switch is on the front of the amp and turns off the whole system. The other controls are include a large main volume control, accompanied by another large Aux volume control, a rotary Main/Aux switch, another switch –the Mid EQ – labelled with 'Soft', 'o', and 'Hard' positions, and a headphone socket. The inputs for this are balanced XLRs switchable at the rear between +4dBu and -10dBV. In addition, there is an auxiliary input on RCA for consumer level devices.

Also on the front panel is the Mid EQ, which is essentially a switch to introduce the option of a subtle peak or trough in the critical vocal band (2.1kHz). Recessed EQ trim pots are provided at the rear.

£ GB£2,061 (inc. VAT)
Ⓦ www.seelectronics.com

CONCLUSION

It's the closest thing I've heard to actually being inside the microphone, in a wide price bracket.

It might even cause other manufactures to rethink their pricing. I'm certain you'd have to go a way up the cost scale to find comparable quality.

Paul Mac

SOURCE
Audio Media November 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201111/

apollo
HIGH-RESOLUTION INTERFACE
with Realtime UAD Processing
ONE GIANT LEAP FOR AUDIO-KIND.
Introducing the Apollo High-Resolution Audio Interface. Decades of UA's analogue design heritage finally meet our esteemed UAD plug-ins in a sleek, elegant recording system for Mac and PC.* For audio producers seeking class-leading sonic clarity, flexibility — and the ability to process sounds in real time with breathtaking analogue emulations and ultra-fast workflow — this is your solution.
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The Rock is a chip off the Boulder.

UNITY AUDIO THE ROCK MKII

Active Studio Monitor

SOURCE
Audio Media July 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201207/

The Rock is an active two-way loudspeaker measuring 325 x 220 x 290mm (HWD), weighing in at 11.2kg and designed by Kevin Van Green. After more than two years on the market, Unity has tweaked the design to Mk II status with some added refinements.

Driver complement is a single 180mm (7-inch) aluminium and pulp fibre-coned woofer together with a folded ribbon tweeter, both supplied by ELAC, recessed into a Corian front baffle. Cabinet construction, as with the Boulder, is in Baltic Birch, though in this case a thinner 12mm form has been used. The amplifiers, one 75W for low frequencies and one 25W for high frequencies, are again from Esoteric Audio Research's Tim de Paravacini. The enclosure is of the sealed infinite-baffle type, so no ports contribute to the LF response: bass rolloff is 12dB per octave.

A look around the back of the loudspeaker reveals an input level control, XLR (balanced) and RCA (unbalanced) inputs plus mains inlet.

The manufacturer explains the Mk II designation thus: "A significant development has come from the shared low frequency amplifier design that we use in the Boulder. We altered the feedback loop in the LF amp module and saw significant bass extension. We decided to try this in The Rock and it produced the same benefits and so The Rock now has a bass response of 33Hz at the -3dB point instead of 50Hz."

£ GB£1,850 (plus VAT) per pair
Upgrade from MkI to MkII GB£65 (plus VAT) per pair
Ⓦ www.unityaudio.co.uk

CONCLUSION

In a marketplace not noted for a lack of small two-way active loudspeakers The Rock must be among the better-conceived ones available; the Mk II changes also make a genuine real-world improvement to the performance, and are not some advertising copywriter's invention.

Punching notably above its apparent weight, class-leading, well-priced British products such as this are in my opinion just what professional audio content creators need.

Nigel Palmer

New compact line array from QSC.

QSC AUDIO KLA SERIES

Line Source Array

SOURCE
Audio Media July 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201207/

The QSC KLA Series is a 'Fixed Arcuate Active Line Array System' aimed at portable and smaller permanent installations where a line array is still required.

The full-range KLA12 is the high-strength, riggable ABS cabinet, residence for two transducers: a 12-inch cone speaker and a 1.75-inch diaphragm compression driver.

The KLA12 compression driver is mounted to a 90x18-degree wave guide horn. The cabinet also contains two power amplifiers, each providing 500W RMS continuously for a combined output of 1,000W RMS. Input is balanced XLR female; an additional male XLR is available for signal pass-through.

The amplifier accepts line level signal and contains Digital Signal Processor (DSP). Its DSP provides crossover and frequency control, limiting/protection, time alignment of the internal transducers, temperature/fan management, and factory voicing/EQ. QSC's DEEP DSP algorithm provides extended bass response "by actively managing potentially damaging low-frequency transients." KLA12 features Neutrik powerCON input and loop thru connectors; weight is 25kg, and dimensions are 382 x 594 x 422mm.

The KLA181 subwoofer, while cosmetically similar, is constructed of painted birch plywood, and hosts an 18-inch vented subwoofer transducer capable of 135dB SPL peak output and frequency response down to 33Hz (-10 dB). Power is provided by its integrated power amplifier (1,000W RMS), and QSC's DEEP DSP is also on board. The sub's incorporated threaded pole mount allows support of two KLA12 full-range enclosures, and suspension is possible via M10 fittings or KLA12AF Array Frame. KLA181 also features Neutrik powerCON connectors; weight is 100 lbs.; and dimensions are 547 x 586 x 653mm.

The KLA Series incorporates a control into its DSP called Arcuate Equalisation, which allows users to decide how many top boxes will be in the array, then to can select that number on a rotary control on the power amp. The DSP will automatically adjust the waveform pattern, ensuring it acts like a traditional Line Array with a cohesive waveform.

The boxes only interlock with each other at a fixed angle, and this selector will ensure the proper fit of each component to the waveform, maintaining proper EQ and uniformity of dispersal of sound.

£ KLA12: GB£2,199.00 (plus VAT),
KLA181: GB£1,899.00 (plus VAT)
Ⓦ www.qscaudio.com / www.shuredistribution.co.uk

CONCLUSION

I must say that I am a fan of these speakers, as the EQ allows very smooth transitions from box to box, combining very nicely, with no appreciable phase disturbance or shading. QSC has consistently-crafted quality products through the years, and this product is one of them.

Will James

CEDAR STUDIO

CEDAR's essential plug-ins..

Plug-In Audio Suite

CEDAR Studio is a suite of RTAS and Audio Suite plug-ins for Pro Tools, selected from the multi-award-winning CEDAR Cambridge flagship range. The plug-ins are "designed to eliminate a wide range of common problems with unsurpassed results, significantly improving your audio results, with the minimum of fuss and user intervention."

There are four modules in the suite: DNS One – Dialogue Noise Suppressor, Adaptive Limiter, De-Buzz, and De-Clip, and are available for Mac OSX 10.5.8 onwards and for PCs on Windows XP/Vista/7 for Pro Tools HD and non-HD V8 onwards. OSX Lion is fully supported as is Pro Tools 10, but PPC Macs are not.

DNS One gets rid of background noise and also works as an AudioSuite plug-in. If the user is working with a hardware box such as the DNS 3000, automation can be set up with DNS One, and the plug-in can control the hardware box. Also new in this version of software is the DNS One RTAS plug, that directly selects the DNS One RTAS processor.

DeClip identifies and removes most instances of clipping in a single pass. The signal analysis window shows hard vertical edges to demonstrate clipping at that sample value. Clipping is visible as peaks on one or both sides of the signal display. Users either click on the set button or wind the purple and green clip markers into position so that the distorted peaks are outside the markers. Two de-clipping algorithms are provided: 'Heavy' is a general-purpose algorithm suitable for most clipping problems, and will correct badly clipped signals. 'Light' is suitable for less damaged signals.

DeBuzz analyses the dynamics of the wanted signal and the buzz, optimally detecting and reducing the buzz with minimal side effects. It provides full-bandwidth processing, removes components across the entire audio spectrum, and it is capable of removing buzzes and hums with fundamental frequencies as high as 500Hz.

Adaptive Limiter uses a unique algorithm that calculates a continuously varying EQ profile that constrains the amplitude of the output while retaining the integrity of the input signal. It therefore fulfills the functions of a very transparent loudness maximiser and a flexible peak limiter.

£ DNS One: GB£2,500.00, DeBuzz: GB£2,000.00, DeClip: GB£2,000.00, Adaptive Limiter: GB£2,000.00, CEDAR Studio Bundle: GB£8,000.00

CONCLUSION

If you are in post production, go smash your piggy bank now – these are post 'must haves'.

CEDAR are jolly nice people to do business with, and have never to my knowledge ever charged for a software update. Highly recommended indeed.

Mike Aiton

SOURCE
Audio Media April 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201204/

NUGEN AUDIO VISLM

Well designed, efficient and customisable loudness measurement.

Loudness Monitoring Plug-In

VisLM (Visual Loudness Meter) is loudness measuring software that comes in two versions: Compact - the 'C' version, and the 'H' or 'History' version, that comes with extensive history and data logging options. The H version comes with a standalone application version. Installation gives you the healthy choice of RTAS, VST, AU, VST3, and standalone options.

The main display meter section is on the far right hand side, with controls to switch between Loudness, True Peak, or Options. The Loudness History is the centre section, showing the historical short term loudness over time. Lastly, an optional area on the left hand side – the Loudness Distribution area – shows the distribution of loudness measurement within the integrated loudness measurement.

The Loudness meter section shows the primary loudness values and controls. It includes the vertical momentary loudness meter in loudness units (LU), which also shows the short term loudness as a white arrow marker. An M Max/S Max button switches between the measurement terms. The integration controls are a set of transport controls that control access to the integrated loudness section of the meter. The Mode indicator simply shows the standard in use. VisLM can measure in all current loudness standard modes.

The plug-in gives a plethora of logging options that will be exported as a csv file, openable in any spreadsheet application. The true Peak Meter shows up any inter-sample peaks. A peak hold bar shows the true peak achieved. Three options for 5.1 are included.

£ VisLM-H GB£281.00 (exc. VAT)
VisLM-C GB£187.00 (exc. VAT)
Ⓦ www.nugenaudio.com

CONCLUSION

If you are looking for a well designed, state of the art, highly efficient and customisable loudness measurement plug-in and stand alone software meter from a trusted name in loudness, then look no further – very highly recommended indeed.

Mike Aiton

SOURCE
Audio Media September 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201109/

Sonnox tackles quality control in audio codec compression.

SONNOX FRAUNHOFER PRO CODEC

Audio Codec Plug-In

The Sonnox Fraunhofer Pro Codec plug-in, for Pro Tools, VST, and AU, packs a lot into one plug-in window. The plug-in is split into several distinct areas, with the main central area defaulting to its online encoder state. Offline encode and decode modes can be selected with two tabs at the top of the window, for direct file processing rather than the realtime processing.

Users can load up to five different codec variations into slots below the main metering area.

Each of these codecs can be set-up via a floating 'Codecs and settings' box that pops up when the appropriate slot is selected. The full range of Fraunhofer IIS co-developed codecs is: HD-AAC (lossless), AAC LC (low complexity), HE-AAC (high efficiency), HE-AAC v2 (parametric stereo), mp3, mp3 Surround, and mp3 HD (lossless to 16 bits). Available settings vary according to the codec type, but bit-rate, mode (constant or variable bit rate selections), and quality (processing speed) are the full set of options for the lossy codecs. Each loaded codec has a record-arm button, a Mon button (direct audition selection), and an over-range indicator for streams that will contain overs when decoded.

Above the codec selections is the metering area. The main view is a basic FFT (dBr) graph, switchable between logarithmic and linear scales. In-meter, the main lines are the input signal and difference views, and users can select individual channels or a sum of them, plus the NMR (Noise to Mask ratio), which shows how well hidden the codec noise is below the perceptual mask. The meter shades vertical red areas when the noise and mask switch places and might cause audible artefact issues. There's also an alternative meter screen with three views – Input & Output, Output & Diff, and Diff x 5.

The Diff button gives users the option to listen to the difference between the input signal and the codec, rather than auditioning the result of the encode-decode; thus allowing the user to focus on potential areas for interest.

£ **GB£295.00 (exc. VAT)**
Ⓦ **www.sonnoxplugins.com**

CONCLUSION

My limited time with the review copy of the Pro Codec has convinced me that I'd like to spend more time learning about ways to minimise compression artefacts and problems earlier in the production process and during the encoding stage. Few people lose work by knowing too much or having too many tools in their toolbox – or owning the best quality means to a popular end.

Paul Mac

SOURCE
Audio Media May 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201105/

Waves comes up with a versatile plug-in EQ.

WAVES H-EQ

Hybrid Equaliser

The Waves H-EQ has five bands of parametric EQ, along with high and low pass filters centrally located in the user interface, all colour coded. One of the key features of the Waves H-EQ is the option to select between seven different equaliser algorithms. Each of these offers a different tonal quality or 'flavour' when processing, and are labelled US Vintage, UK Vintage 1, UK Vintage 2, US Modern, UK Modern, Digital 1, and Digital 2.

The equaliser section of the Waves H-EQ has a function that relates specifically to bandwidth. Instead of simply widening or narrowing the bell curve, users can apply a tilt instead. A side effect of using a wide bell curve can be to have an undesired effect to portions of one of the extremes of the bell. This usually requires the addition of other bands to compensate for this, but the ability to tilt the bell can counteract this.

The input section offers two faders with associated dBFS meters. In Stereo/Linked mode, the faders are locked together, whereas in Dual/Unlinked mode, left and right are independently manipulated. In M+S mode the faders control input levels for the M and S channels independently. The output section has a similar fader/meter arrangement with the same scales. Beneath the faders, a trim indicator gives the level to odBFS, and the phase of each channel can be inverted by 180 degrees.

The analogue function in the Waves H-EQ output section allows users to introduce varying degrees of hum and/or noise to the signal, along with some THD. US vintage algorithms introduce 60Hz, where UK Vintage adds in 50Hz.

Sitting centrally and dominating at the top of the Waves H-EQ interface is the real time spectrum display. This displays the frequency make-up of the incoming signal or signals based on the mode selection at input. Users can choose to see combinations of signals or in isolation. As well as the signal data, the EQ curve created is also visible together with the results of this processing applied to the original signal.

£ **H-EQ Native: US$150.00, H-EQ TDM: US$300.00**
Ⓦ **www.waves.com / www.sonic-distribution.com**

CONCLUSION

As a versatile multi-faceted solution to many frequency issues the Waves H-EQ is a very attractive proposition indeed. Having this flexibility of processing, excellent visual feedback, and original additions in a single equaliser plug-in is very appealing.

Simon Tillbrook

SOURCE
Audio Media January 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201201/

AMS NEVE 1073LB PRE-AMP & LB EQ

AMS Neve's 500-series variants on the classic 1073.

Mono EQ Module

The AMS Neve 1073LB pre-amp single 500-series unit has a green/red signal LED, which sits above the red 22-position ELMA rotary control for input gain of the Class A input stage. Each notch is a 5dB step running from -20dB to +10dB for a selected Line signal and -20dB to -80dB for a mic signal. Both the mic and line input options go through the AMS Neve 1073LB Class A transformer coupled output stage.

A trim rotary control refines the signal level to this output stage and runs from -10dB to +5dB. Also, when this pot is pressed, the +48 phantom power is activated for the microphone input.

The first of three buttons next to the trim control on the AMS Neve 1073 LB selects either a Lo-Z (300Ω) or Hi-Z (1200Ω) input transformer coupled stage. The second is a phase invert switch, and the third selects the input source.

As well as the balanced XLR inputs and output on the rear of the Lunchbox, the AMS Neve 1073LB has a front XLR/TRS combination socket. The FR (Front) I/P button is used to select line or mic input from this combination connector.

The 1073LB EQ is also a single slot unit and has three dual concentric rotary controls and an EQ in/out button. The outer ring of the AMS 1073LB EQ top control selects turnover frequency of the 18dB per octave HPF between 50Hz, 80Hz, 160Hz, and 300Hz. The inner control gives you +/-16dB cut and boost of a fixed 12kHz smooth shelving EQ.

The mid section of the 1073LB EQ has a fixed Q value, but the centre frequency can be selected using the outer rotary control from 0.36kHz, 0.7kHz, 1.6kHz, 3.2kHz, 4.8kHz, and 7.2kHz. The inner control applies +/-18dB of cut or boost.

The low frequency outer dial of the AMS Neve 1073LB EQ selects 35Hz, 60Hz, 110Hz, or 220Hz as the frequency point for this low shelving section. The inner dial then applies +/-16dB of cut or boost to your chosen signal.

£ AMS Neve 1073LB pre-amp: GB£695.00 (exc. VAT)
AMS Neve 1073LB EQ: £895.00 (exc. VAT)
Ⓦ www.ams-neve.com / www.kmraudio.com

CONCLUSION

In the AMS Neve 1073LB pre-amp and 1073LB EQ, we have all the attributes of a true classic design and sound in a format accessible by more audio professionals and studio facilities than ever before.

Simon Tillbrook

SOURCE
Audio Media October 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201110/

ANTELOPE AUDIO ECLIPSE 384

High quality analogue and digital converter.

A/D-D/A Converter

The Eclipse 384 is more than just a digital converter. It also sports a flexible monitor section, USB audio interface, sophisticated headphone amplification, and a central clocking system alongside its digital duties. It's a weighty 8Kg 2-unit high 19-inch rack unit with an elegant front panel dominated by a large OLED display that shows the state of the various system parameters, alongside a 32 segment bar graph monitor that can display the levels of any of the device's inputs and outputs.

There's a stepped main monitor level control. Under this control are the Mute and Mono buttons, and a Dim control that lowers the output level with a preset attenuation. Two wide impedance range headphone jacks lie under the headphone level control. Five pre-set buttons and the 'Antelope' button completes the front panel controls.

The rear is packed to the brim with connectors. Power is via a standard IEC mains plug and sits alongside connections for word clock outputs on BNC connectors, quarter-inch TRS footswitch connector, AES/EBU, S/PDIF and Toslink de-jittered outputs, along with the complementary digital inputs. Two AES/EBU outputs provide a signal from the D/A converter and are used in tandem when the unit is clocked at 384kHz – its maximum sample rate.

Balanced analogue inputs on XLR and TRS connectors are provided along with two quarter-inch TRS insert points that allow users to patch in a processor just before the A/D conversion. There are three stereo pairs of balanced monitor outputs along with a balanced output for a sub woofer. A quarter-inch jack provides an input for a talkback microphone, while CUE HP outputs for cue mix listening are provided on balanced stereo quarter-inch sockets. A USB 2 socket provides an interface to a computer, and finally there's also a facility for the device to accept an Atomic clock input.

The Eclipse 384 also acts as a high quality stereo computer USB interface and features a flexible monitoring system. The supplied Eclipse 384 software allows users to select and name inputs and outputs, clocking options and sample rates and conversion. A/D and D/A conversion is also set up from the software.

£ GB£5,995.00 (inc. VAT)
Ⓦ www.antelopeaudio.com

CONCLUSION

Conversion doesn't get much more stable and accurate – and the added advantage of having the audio interface and monitor section means that it's going to be more useful in more situations than most standalone converters.

Stephen Bennett

SOURCE
Audio Media June 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201206/

Compromise-free interface from Apogee.

APOGEE SYMPHONY I/O

Multi-Channel Audio Interface

The Symphony I/O is an Apple Mac-only expandable interface capable of capturing audio at up to 192kHz at 24-bit resolution. It can be used either with Apogee's own Symphony 64 PCIe cards (a small format PCIe card with two multi-pin outputs, each providing 32 channels of audio for Symphony I/O racks), Avid's Pro Tools HD cards (Mac and PC versions supported), in Standalone mode just as a A/D D/A converter or using the USB connection – all switchable from the front panel via what Apogee calls the Audio Interface Mode (AIM) technology. There are user selectable input and output configurations, and multiple Symphony I/O units can be connected to increase the physical input, and output counts. The Symphony I/O features Apogee's C777 clock technology.

The front panel has two push-to-click soft knobs which select and control the parameters displayed on the OLED panel, which is itself situated underneath a panel containing a bank of programmable, 10-segment LED bargraph meters and a large sample rate display. There is also a power switch and two independent headphone sockets.

The rear panel has a multi voltage IEC mains connector, wordclock connections, and USB and Ethernet sockets. The Symphony 'Main' multi-pin socket is for connection to Symphony 64 PCIe, Symphony Mobile Express/34 cards or Avid HD PCIe cards, while the 'Thru' socket allows users to add another Symphony I/O for extra physical ins and outs. The rest of the rear panel is dedicated to the I/O module slots.

Apogee has four I/O modules available, two of which can be installed at the same time. They have the following configurations: eight channels of analogue I/O with eight channels of AES I/O, eight channels of analogue I/O with up to eight channels of Optical I/O, 16 channels of analogue outputs with up to 16 channels of digital inputs, and 16 channels of analogue inputs with up to 16 channels of digital output.

£ Symphony Base Chassis: GB£1,330.00 (exc. VAT)
All option cards: GB£1,573.00 (exc. VAT)
Symphony 64 PCI-E card: GB£715.00 (exc. VAT)
Ⓦ www.apogeedigital.com / www.seelectronics.com

CONCLUSION

The Symphony I/O upholds Apogee's pedigree with respect to audio quality while adding expandability, flexibility, and ease of use into the equation. It works beautifully as an alternative or companion to Avid's own interfaces in a Pro Tools HD system and just as well as on its own.

I think Apogee has got it just right with the Symphony I/O and I'm looking forward to seeing how the system develops over the coming years.

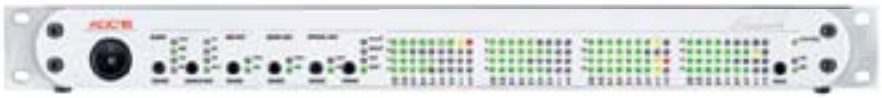
SOURCE
Audio Media September 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201109/

Transparent analogue to digital conversion.

BENCHMARK ADC16

Multi-Channel A/D Converter



The ADC16 offers 16 channels of A to D conversion and can generate 24-bit audio at sample rates up to 192kHz, via a variety of interfaces and protocols. The rear panel has 16 channels of transformerless balanced analogue inputs via two D-Sub Tascam connectors, 16 channels of AES digital I/O (again on two D-Subs), 16 channels of S/PDIF digital outs on eight RCA sockets, and eight optical digital outs – which can be configured in various ways. Between these lie the sixteen input trim pots, each offering a 23dB gain range. Two BNCs provide clocking facilities. The Clock reference input accepts Word Clock, Super Clock, and AES with an auto recognition feature, while the Word clock reference output can be used to synchronise other units connected to the ADC16.

Most of the front panel is taken up by 16 horizontal multi-function LED meters, each with peak hold and scaling controls – the latter being adjustable in 1 or 6dB steps. To the right of the power switch are buttons for selecting Clock source (Internal, WordClock, AES or DAW), sample rate, AES output source (DAW or A/D, where the 16 analogue inputs are routed directly to the digital outputs.), S/PDIF source (DAW or A/D), optical out source (DAW or A/D) and finally, the optical output's format.

In S/PDIF mode, two channels of audio are transmitted in AES format via each optical output, while in ADAT mode, each optical output can route eight channels at up to 48kHz sample rates – so two outputs will be required for sixteen channels of audio. For sample rates above this value, the optical outs will switch to S/MUX2 or S/MUX4 formats.

The former allows up to four channels of audio per output at sample rates of 88.2 and 96kHz, while the latter allows for two channels of audio to be carried at sample rates of 176.4 and 192kHz. In this mode, eight optical channels will be required to output sixteen channels of converted audio. Several of the LEDs also act as warning indicators, for example if there are any clocking or sample rate issues.

£ GB£3,150.00 (exc. VAT)
Ⓦ www.benchmarkmedia.com / www.scvlondon.co.uk

CONCLUSION

I almost forgot that I had the ADC16 patched into my system – which is possibly the most flattering thing you can say about a unit designed to be transparent in use. For those requiring the highest quality analogue to digital conversion, the Benchmark unit delivers exactly what it says on the box. With an ADC16 converting your current into digits, you need to have no worries that you're losing any important information along the way.

Stephen Bennett

SOURCE
Audio Media October 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201110/

FOCUSRITE ISA TWO

A dual-mono 1U rack version of the popular pre-amp.

Two Channel Mic Pre-Amp

The ISA Two comes with the traditional blue and grey colouring and chunky knobs. The ISA range has kept to the same circuit design that Rupert Neve created when he was originally commissioned by George Martin to create a super-clean mic amp for his Neve console. That was the original ISA 110 module. And that 110 setting is still there in the new ISA Two, but with four switchable impedance settings, giving creative options when recording with different types of mics. This means users can choose the character sound to match their mic.

The ISA Two is split into two identical channels, offering up to 80dB of gain, 20dB via its original Lundahl input transformers, and 60 dB via the input stage. This circuit design with Rupert Neve's use of a Zobel network, insures maximum gain with minimum noise whilst achieving a very flat frequency response. Having balanced XLR and jack inputs on the rear it can accept both mic and line level inputs, while the front offers two high impedance instrument Di inputs. There is also switchable insert with send and return inputs via TRS for adding a compressor or EQ.

The familiar Blue ISA face plate has a switchable input source for mic, line or instrument; the impedance 'Z' switch featuring Low (600Ω), ISA 110 (1.4kΩ), Med (2.4kΩ), and High (6.8kΩ) settings, a phase reverse switch, and input selection. Then come the three main controls – the main gain selection (switchable form 0-30dB or 30-60dB), a trim control with 20dB range, and a high-pass filter.

£ ISA Two £699.99 (inc. VAT)
Ⓦ www.focusrite.com

CONCLUSION

In use the ISA Two is suited to all manner of recordings, perfect for the end of the garden studio, the pro studio, even the live gig.

One of my favourite features was an output meter calibration, which helps line up levels with your DAW inputs – this means you no longer have to watch the record levels on the screen. It's a simple function, but user features like these make such a difference when doing an important recording and you need to rely on your gear.

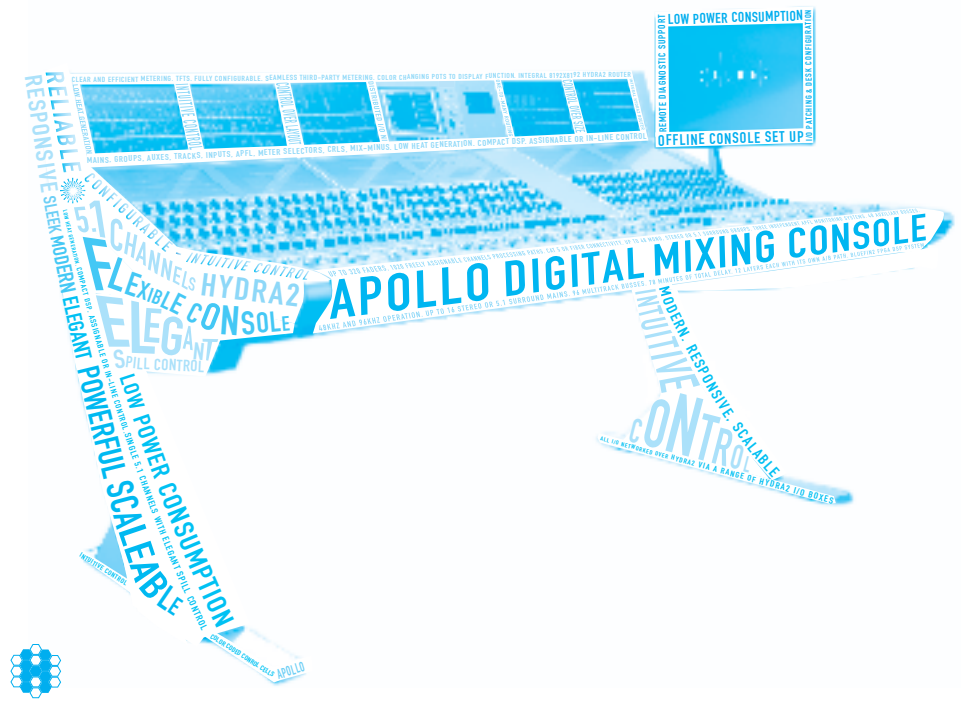
The ISA Two's well designed, user-orientated interface with no frills and superb sound quality means it's definitely one to consider if you're after a cost effective but high quality mic amp.

Alan Branch

SOURCE
Audio Media July 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201207/

APOLLO, FROM CALREC.
FORM AND FUNCTION, SEAMLESSLY MATCHED.



HYDRA2 Bluefin2

calrec.com

CALREC
Putting Sound in the Picture

Today's broadcasters need more and more audio channels at ever-higher resolutions, more power to handle this increased channel count and more ergonomic control surfaces to manipulate them.

Naturally, Calrec has the answer.

With the same levels of reliability for which Calrec are world-renowned and a remarkably intuitive control surface which still manages to add enormous flexibility, Apollo is nothing short of revolutionary. Calrec's Bluefin2 DSP engine equips Apollo with more than 1000 channels for 5.1 Surround production and its internal 8192² Hydra2 router turns the console into a powerful networking tool.

The world's most successful broadcasters rely on Calrec consoles.

Apollo is the first of Calrec's new generation.

APOLLO

Quick and silent monitor switching.

RADIAL MC3

Monitor Controller

The MC3 is just 148x48x115mm in size and weighs in at just under a kilo. The controller has a firm felt bottom to keep it on the desk, and the metal case is covered with a baked enamel coating with the controls and connectors recessed to protect them from abuse. The monitor switching is passive, so the circuitry doesn't add or subtract anything from the audio passing through it. The front panel sports two quarter-inch headphone outputs with a single dedicated level knob a 3.5mm earbud socket. An on/off button switches the headphone feed on and off and this, along with the headphone gain control, also affect the signal sent from the rear panel Aux output. A supplied wall wart PSU powers the headphone amp, sub woofer output, LEDS, etc.

The MC3 can be used with both balanced and unbalanced cabling. All connections are via quarter-inch sockets mounted on the rear panel of the unit. Two sets of monitors and a sub woofer unit can be plugged in and their relative levels determined via recessed preset potentiometers on the top panel. The phase of the sub woofer can be set here as well. Also on the front panel there's a Dim control to reduce the monitor level to a preset amount (again set on the top panel) and a mono button to help you sort out phase issues. The front of the MC3 is completed by a level control. Finally the MC3 has select buttons for the two sets of audio monitors for mix checking.

£ GB£336.00 (inc. VAT)
Ⓦ www.radialeng.com / www.shuredistribution.co.uk

CONCLUSION

A device like this stands and falls on its sonic and operational properties and I can report that the MC3 excels in both areas. It imparts no discernible changes to the audio passing through it. Monitor switching was silent and quick, while the Phase and Dim buttons do what they say on the tin.

It lacks some of the features of other monitor controllers, such as talkback and alternative stereo inputs, but if all you need is a portable system that will allow you to quickly check phase issues, drive your headphones with some high quality amplification, and allow you to switch between a couple of sets of monitors for mix checking without adding any colour of its own, the MC3 could be exactly what you've been looking for.

Stephen Bennett

SOURCE
Audio Media June 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201206/

THE TOTAL BROADCAST MICROPHONE SOLUTION
In the studio or on location, Røde microphones combine uncompromised audio performance with innovative features designed to enhance your workflow and optimise results – all at prices that will make your budget travel a lot further.
Find out more about Røde broadcast microphones at www.rodemic.com
HS1-B HS1-P
Clear audio, low handling noise and subtle, ergonomic design with full mechanical adjustment and a choice of MiCon™ connecting accessories.
HEADSET
Lavalier
Pristine sound quality, low handling noise, water resistant pop filter/ mini furry and a flexible range of MiCon™ connecting accessories.
LAVALIER
Procaster
From voiceover recording to on-air and podcasting, a comprehensive range of high quality microphones encompassing condenser, dynamic and USB models.
VOICEOVER
NEW
NTG-8
Shotgun mics at killer prices. A choice of high performance microphones including the new NTG-8, plus a range of camera-mounting models.
SHOTGUN
Blimp
A full range of shockmounts, windshields and boompoles designed to ensure exceptional results in every application.
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RØDE MICROPHONES

RADIAL ENGINEERING WORKHORSE

Radial Engineering's update of the 500-series Rack concept.

500 Series Rack

The Workhorse from Radial Engineering is housed in a 3RU 19-inch steel enclosure, and has eight slots to accommodate 500-series modules. The Workhorse's eight card slots come with easy glide trays to make fitting modules straightforward. The trays can be removed to fit non-standard and double-width modules, and each 500-series module can draw as much current as it needs from an overall pool of 1200mA. This power is produced by a high-current external switching power supply. Radial has dispensed with any form of power switch so when the unit is plugged into the mains, it's on.

There is a basic, high-quality eight-channel mixer and summing bus. A simple master section offers separate pots for master and monitor output as well as level control for a pair of front mounted high output headphone jacks. The main outputs utilise isolated Jensen transformers. Small LEDs show the status of the ±16V power rails and phantom power, and there's a mono switch for quickly checking stereo phase issues.

Round the back, all the module I/Os are duplicated on XLRs, TRS jacks, and balanced 25-pin D-subs. TRS inserts are provided on the main outputs and an extra D-sub handles direct ins from a DAW or other recorder so users can bypass the module section altogether and use the Workhorse as a stand-alone eight-channel summing mixer. A pair of 1/4-inch jacks allows the user to expand the mixer to a 16x2 format by connecting a second Workhorse. Radial has also added some extra functionality to each module's housing, starting with a stereo link switch that allows for the electronic linking of two mono units. The 'Feed' function automatically patches one module to its direct neighbour without the need for external cables.

The 'Omniport' is an additional TRS jack that's routed to edge pins seven and nine on each module card, and this can be used to enhance the functionality of suitably provisioned modules.

£ **GB£1,499.00 (exc. VAT)**
Ⓦ **www.radialeng.com / www.shuredistribution.co.uk**

CONCLUSION

It's hard to imagine squeezing any more functionality into a 3U device like this, and Radial is to be congratulated for putting plenty of thought and design smarts into such a compact and attractive package. The Workhorse doesn't cost an arm and a hindquarter more than the other full-width 19-inch 500-series rack options out there, yet this extra functionality will be invaluable in areas as diverse as live recording, or anywhere that requires zero-latency monitoring, headphone mixes, mix processing and, of course, analogue summing.

Greg Walker

SOURCE
Audio Media October 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201110/

RND PORTICO 5024

Pre-amp based on the Portico 5012 Class A transformer design.

Quad Mic Pre-Amp

Each of the four channels of the Portico 5024 has a single balanced XLR input and XLR output on the rear. The first two channels on the front of the Portico 5024 are each fitted with a transformer isolated Hi-Z DI input and paralleled thru output. These are accessed via the front TRS sockets, and plugging into them automatically replaces the microphone input. Channels three and four of the Portico 5024 incorporate M-S decoding. The microphone input XLR connectors on the rear can also accept a line signal.

The decode matrix can be engaged using the M/S button that sits between these two channels of the Portico 5024, and then the decoded stereo signal from the channels output can be recorded, or the button can be disengaged to record cardioid and figure-of-eight signals for later decoding.

The remaining functions apply to all four channels of the Portico 5024. Input level can be adjusted by a combination of two rotary controls labelled 'Gain' and 'Trim'. Gain is a course level control moving in 6dB steps from 0 to 66dB, and Trim is a constantly variable control giving +/-6dB of fine adjustment. The level is indicated through an eight-segment peak LED metering display that illustrates a level from -18 to 22.

There are a series of backlit buttons for other channel functions on the Portico 5024. Phantom power, phase reverse of 180-degrees, and mute sit in a line along with the 'Silk' button. Engaging Silk introduces a vintage feel.

Finally, each channel of the Portico 5024 has a HPF that attenuates by 12dB/octave with a selectable turnover frequency of either 30Hz or 90Hz.

£ **GB£2,195.00 (exc. VAT)**
Ⓦ **www.rupertneve.com / www.sonic-distribution.com**

CONCLUSION

The Portico 5024 is a real delight. It is a high quality versatile pre-amplifier, and with the DI and M/S facilities, it is that little bit more attractive. Sonically, it is every bit as good as we have seen with previous Portico units. Having four in a standard 1U rack mounted frame is going to appeal to many who want top end versatile pre-amplifiers.

Simon Tillbrook

SOURCE
Audio Media February 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201202/

Universal Audio widens the possibilities for its Twin Finity pre-amps.

UNIVERSAL AUDIO 4-710D

Mic Pre-Amp

The Universal Audio 4-710d is a 2U box containing four Twin Finity 710 microphone/line pre-amplifiers with their solid state and tube blending capabilities, along with an additional four line inputs that can feed the eight channels of analogue to digital conversion. The four Twin Finity 710 preamps also have a basic compressor based on the UA 1176, as well as a switchable insert point.

The four channels of 710 pre-amp each have balanced XLR I/O (mic and line levels on input), plus insert sends and returns on balanced TRS sockets. The insert return TRS socket can also be used as an additional line input.

On the front panel are four unbalanced JFET Hi-Z instrument inputs for each of the four 710 Twin Finity preamps. When users plug into these TS sockets, the rear input connection options are bypassed in favour of the front panel connection.

Each of the four 710 Twin Finity pre-amps has the same set of functions: a lit VU meter with selections for output, gain reduction, or drive (input level to tube stage); mic/line, phantom power, -15dB pad, low cut (75Hz), and phase reverse; insert and 1176-style fast/slow compression selections; then input gain, output level, and Tone Blending. There are two input stages, Universal Audio's solid-state transimpedance design and a Class-A tube 285VDC input that uses a single 12AX7 valve. Either of these input stages can be used, or blended together with this rotary control. The output of each of these stages is then summed together to form a single variable output signal.

On the right hand end of the unit are digital output options. Each of the eight converters has two LED indicators – a green one for between -37 and -6dBFS and a bi-colour one for -6 to -1dBFS (yellow) and red (>-1dBFS) with peak hold. There's a selection switch for 16- and 24-bit, a multi-position rotary selector for sample rate (44.1, 48, 88.2, 96, 176.4, 192kHz, and WC), and a Lock LED to confirm word clock sync.

£ GB£2,039.00 (inc. VAT)
Ⓦ www.uaudio.com / www.hhb.co.uk

CONCLUSION

The Universal Audio 4-710d is an example of what a manufacturer can produce with such a depth of experience to draw upon. This is an extremely well thought-out device, and the evidence to support that argument is here in spades.

A single Universal Audio 4-710d would be a wonderful front end to any system, but four would allow for real tracking and live sound workflow virtually anywhere, a fabulous feature rich package all in a 2U box.

Simon Tillbrook

SOURCE
Audio Media July 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201107/

A high-end offering from Olympus.

OLYMPUS LS-100

Multi-Track Linear PCM Recorder

The LS100 has a colour LCD screen on the front along with the Play/Stop/Record buttons and controls to access the Menu system. On the right side is the Record Level dial, with numbers clearly visible. It's of the dial-within-a-dial variety, with the level and right channels initially locked together, unlike some machines with two separate level controls.

On the left side is the on/off slider and controls for volume level (for headphones or the small built in speaker) and Phantom Power. There are also mini-jack sockets for headphones and a stereo mic lead, plus a connection for an Olympus remote control. There's also a USB connection.

It has 4GB of built-in memory, but there's also a SDXC card slot for extra storage. This slot also houses the 100's rechargeable battery. On the top are the built-in stereo mic capsules, and at the opposite end of the recorder sit two XLR quarter-inch combination inputs.

There are five main sections to the menu: Recorder, Multi-track, Lissajous, Metronome, and Tuner.

Lissajous is basically a way to set two externally connected microphones in phase with each other. Metronome offers adjustments for tempo (bpm).

Multi-track gives the ability to record audio in layers. There are eight tracks, each using the current selected input and users can record on one at a time, overdub on any track or scroll up and down to another. It can then be exported to a stereo .wav file.

£ GB£399.99 (inc. VAT)
Ⓦ www.olympus.co.uk

CONCLUSION

This is a well-designed and very well made recorder that exudes quality from every counter-sunk screw. It's easy to use and the sound quality is first rate. It shows two things: how spoilt we are for choice these days, and how far the new boys at Olympus have truly come. I can't wait to see what they have up their sleeves next.

Jerry Ibbotson

SOURCE
Audio Media May 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201205/

ROLAND R-26

Digital Hand-Held Recorder

A combination of portable and location recorder.

The front/top surface of the R-26 is dominated by the grey-scale LCD screen and two recording level dials. Below these are soft-touch buttons for main functions and at the top of the machine are four microphone capsules (an X/Y stereo pair and a separate pair of omnidirectional mics). There are also two XLR/quarter-inch combined inputs in the base for use with external microphones and line sources, plus a mini-jack input on the side for use with another mic.

It can record up to six channels using a combination of different inputs. If using it in one of the six-channel modes then the record levels are set by a combination of the input dials and the touch screen.

The sensitivity of the inputs can be adjusted, separate to the gain. The directionality of the X/Y mics can be adjusted. If using the XLR inputs, they can be set to take an M/S input and adjust the width. If using both sets of inbuilt mics, the balance of the two can be adjusted. Recording can be done in a range of file types and quality settings, up to 96kHz 24-bit .wavs. It can also act as a USB audio I/O device if hooked up to a Mac or PC.

The buttons on the front are rubberised, and the touch screen uses icons and images to guide the user around, as well as tabbed sections to show where features are kept.

£ GB£340.83 (exc. VAT)
Ⓦ www.rolandsystemsgroup.co.uk

CONCLUSION

This machine is phenomenal. I've seen it online for £ 350, which is astonishing considering what it can do. To me it straddles two camps: portable recorders (like my beloved Olympus LS-5) and location machines (like the R-4 Pro). It can be used in grab-it-and-hit-record stylee to get fx audio on the move, but then can be set-down and hooked up to different mics for a more considered, fixed-position recording. With that price in my mind, I'd say the bar has been raised.

SOURCE
Audio Media March 2012

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201203/

RYCOTE PORTABLE RECORDER AUDIO KIT

Windshield Suspension Solution

Rycote comes up with a pro solution for reducing handling noise.

Rycote's Portable Recorder Suspension Kit is a combined windshield and suspension solution. The kit, claim Rycote, contains everything needed to protect a handheld digital recorder from outdoor wind noise, and to isolate it from unwanted vibrations, whether from handling or stand-borne noise. It is aimed at journalists, film-makers, or anyone using a handheld digital recorder to make professional-quality audio recordings outdoors.

It has a threaded mounting attached to a floating base, using two sections of curved plastic that act like springs – their patented Lyre design.

In the base of the mount is a swivelling section with a male head, to which the Extension Handle is screwed. This has a metal core and a foam rubber outer; a bit like a handlebar grip. Once in place it promises to drastically reduce the amount of handling noise that gets through to the recorder. The handle can be replaced with a boom pole, or supplied camera hot shoe adaptor, which lets the user fit their machine to a video camera or DSLR. The 180-degree swivel allows the recorder to be pointed in the exact direction of the speaker.

The kit contains one Portable Recorder Suspension, one Zoom H4N Mini Windjammer, and one Soft-Grip Extension Handle.

£ GB£83.20 (exc. VAT)
Ⓦ www.rycote.com

CONCLUSION

It's a really neat bit of kit. Rycote claims the plastic is virtually indestructible and, while I've no intention of testing that, I can say that build quality is first class. It reeks of a professional product and I can see it being used by radio journalists in a scrum, as well as sound effects monkeys like myself. Combined with the Windjammer, it turns a handheld machine into a much more serious and confidence-inspiring package.

Jerry Ibbotson

SOURCE
Audio Media June 2011

DIGITAL EDITION
nxtbook.com/nxtbooks/newbay/audiomedia_201106/

HDTV

KEVIN HILTON continues his exploration of the evolution to digital television and HD.

There's always the sneaking suspicion in the minds of consumers – and even some engineers, who are consumers as well as broadcasting professionals – that any change in broadcast technology is merely a way to get people to buy new television sets. High definition TV (HDTV) has been the next step in televisual development for over 30 years, and while there was the thought that it was yet another cynical ploy on the part of manufacturers, it has in fact ended up fulfilling a need rather than creating one all by itself.

A New Era

The home cinema boom of the 1990s ushered in the era of the big TV screen. Initially these were larger scale cathode ray tube (CRT) sets with a widescreen aspect, but these were soon joined by massive rear projection systems of up to 40-inches. As more affordable and advanced technologies appeared, plasma, LCD, and LED became the obvious choices for large screen viewing because they can be built into slimmer, lighter products, and give better picture quality.

Standard definition (SD), carried by the PAL, NTSC, and SECAM coding systems, has served broadcasters well since the late twentieth century. With film – both 35mm but more commonly 16mm – as a source material, later joined by analogue and then digital videotape, broadcasters have produced good quality pictures that were reproduced well on CRT sets.

The arrival of the new screen technologies and digital TV (DTV) has highlighted the limitations of SD when shown on larger displays. With people already buying new LED, LCD, and plasma sets, albeit SD models, HD was seen as a way to allow viewers to have images that fit the new generation of screens by providing stable, high quality images with improved depth and colour tones/textures.

As with the introduction of any new technology, there has been a lag between the start of HD broadcast tests and new high def displays appearing in the shops. Japan has led the way with both broadcast systems and new displays. In the US broadcasters began producing and testing HD programmes at the end of the 1990s, but the first HD sets were not introduced until 2002. Once they began to appear, however, sales rose, with 3.5 million HD screens shipped across the US during 2003.

The major difference between the US and European TV markets during the 1990s and into the 2000s was that they already had multi-channel broadcasting, offering a wide variety of services and programming. This meant the big selling point of HD for American viewers in particular was sharper, better picture quality.

In Europe, the introduction of multi-channel digital services was regarded as a higher priority than HD. Even so, back in the days of analogue high definition, it was foreseen by broadcasters and developers that European HD services would begin in 1992, in time for the Barcelona Olympics.

HD In Europe

It took another 12 years later before HD began to be a reality in Europe. In January 2004 the continent's first HD TV service, Euro 1080, went on air from headquarters just outside Antwerp. The main force behind Euro 1080 was Belgian outside broadcast company Alfacam, which put the first European HD OB truck on the road and became a major player in the OB market with its increasingly HD-capable fleet. The company, along with another Belgian firm, Outside Broadcast, provided HD vehicles across Europe at a time when other suppliers were still contemplating the big move into the technology.

> "A major sign of faith in high def was the Euro 2004 football tournament being shot in HD; all stadia featured suitably-equipped cameras, routers, and vision equipment, even though the pictures had to be down-converted to SD for most broadcasters taking the host feeds."

Euro 1080 started with two channels: the Main Channel, showing music, sport, regional programmes, and films in HD for four hours a day; and the Event Channel, screening live or delayed live special events. With almost no domestic TV sets capable of receiving HD available in Europe at the time, the main outlet for Euro 1080's programming was digital cinemas, which were beginning to see the potential in screening live concerts and big sporting events.

Even before the start of full HDTV services and the appearance of HD-capable sets on the high street and in Internet shops, broadcasters had been shooting productions in the format to ensure they were ready for when the technology was fully implemented. A major sign of faith in high def was the Euro 2004 football tournament being shot in HD; all stadia featured suitably-equipped cameras, routers, and vision equipment, even though the pictures had to be down-converted to SD for most broadcasters taking the host feeds.

While the availability of HDTV-ready screens was a major consideration behind the full rollout of HD services, there was a considerable technical obstacle that had to be overcome before the technology became an international reality. A major reason for Europe not entering the HD market alongside the US and Japan sooner was that broadcasters and regulators were waiting for agreement on a unified HDTV standard.

The key to this was defining a common interface format (CIF). Standards body the International Telecommunications Union (ITU) drew up ITU-R BT.709 was drawn up to provide the CIF. It sets out three specifications for HDTV: 720/50p (progressive), 1080/50i (interlaced), and 1080/50p. The figures of 720 or 1080 refers to the number of active lines used for displaying images. HDTV is a widescreen format, with an aspect ratio of 16:9 (or 1:78:1 in cinematic terms). The aspect ratio is the same as the ratios used for pixel: 1920x18080 in 1080i

GLOSSARY

Object-based compression
This is a key part of MPEG-4 technology as it allows high quality video to be transmitted over much lower bit rates than block-based compression schemes such as MPEG-2. Unlike block-based technologies, object-based encoding creates and then compresses a representation of a 3D scene as the human eye sees it. As a great deal of many scenes is stationary representing an image in an object-based way is more efficient than compressing blocks of pixels in a video frame. During the process images are turned into object planes – planes that contain a real or virtual object in an optical system and which is usually perpendicular to the axis of the system being used – and where an object overlap with an object plan, it is expressed in terms of intra-coding, forward projection, and bi-directional predictions.

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Object-based Encoding: Next Generation Video Compression by Thomas M Strat http://webdev.apl.jhu.edu/~beser/525759/object-basedencoding.pdf.

HDTV

news

NHK Science and Technology Research Laboratories (STRL) is to receive the International Honour for Excellence at this year's IBC for its contributions to broadcasting and specifically for its current development of the Super Hi-Vision television format.

The award is the highest presented by the IBC and is given annually to "an outstanding individual or organisation who has fostered or contributed to the relationship between technology and creativity in the broadcast, movie or media industries." Past recipients include British broadcast Sir David Attenborough (2011), film director, and 3D evangelist James Cameron and the BBC Natural History Unit.

The STRL is part of Japanese public broadcaster NHK and has been at the forefront of research into new broadcast techniques and technologies since it was established in 1930. The labs were founded five years after radio broadcasting began in Japan and include soundless areas and reverberation rooms.

Super Hi-Vision is the next step on from current high definition technologies. It has a screen resolution 16 times greater than existing HD and works in conjunction with a 22.2 channel immersive surround sound system. NHK STRL engineers are currently working on the complete production and delivery chain, from high-resolution high speed CMOS cameras through recording and transmission equipment to screens and projection displays.

The award has been made by the IBC Council, whose chair, Peter Owen, comments, "The contribution to broadcasting technology made by NHK cannot be underestimated. Their work has always been revolutionary but equally important NHK has been generous with its efforts, collaborating with international bodies like the ITU and SMPTE, along with its contribution to global standards like MPEG."

The IBC2012 International Honour for Excellence will be presented to NHK STRL during the Awards Ceremony, to be held at 18:30 on Sunday, September 9, and open to all IBC attendees.

and 1280x720 with 720p. Because of this HDTV pixels are square, as are those used in computer graphics. Because of this the broadcast and computer technologies can be integrated more easily, which is becoming a major point now that viewers want streaming services on their TV sets as well as their PCs.

In-2 The Next Gen

SD digital television and DVD encoding is based on MPEG-2 compression. MPEG (the Motion Picture Experts Group) began looking for the next generation compression system in the late 1990s and in 1999 published the specification for MPEG-4. This works on an object-based (see glossary) method of compressing video material, rather than previous block-based techniques. As well as delivering high quality compression for HD transmission, MPEG-4 was also significant in being able to deliver broadcast images at low bit rates, as well as offering multimedia services such as mobile reception and data communications.

Standards bodies the ISO/IEC and ITU began working together in 2001 on a new coding system called Advanced Video Coding (AVC), which would be specifically for the transmission of HD video. In 2003 AVC was agreed and became part 10 of the MPEG-4 standard, under which it is formally known as H.264.

AVC was developed specifically to handle high definition signals. MPEG-4 itself is able to offer greater processing capability for HD digital TV than the existing MPEG-2, which was established as the standard for standard definition transmission. AVC/H.246 is a component and works in conjunction with AAC (advanced audio coding) for multi-channel audio and surround sound.

The profiles for H.264/AVC and MPEG-2 differ because of the incorporation of multimedia capabilities. Among the profiles for MPEG-4 are: a baseline profile for low-delay applications through the whole broadcast chain (from production to transmission and delivery); an extended profile for mobile applications; a main profile for SD broadcasting at bit rates of 1.5 to 2Mbps; a higher profile for HD broadcast, in addition to studio production work. These main areas have sub-profiles that include 8-bit and 10-bit sampling, 4:2:0, 4:2:2 and 4:4:4 sampling schemes.

MPEG-4 H.264/AVC is a major move on from the MPEG-2 standard, although it was designed to be carried on available MPEG-2 transport and modulation systems. This means that MPEG-2 uses a high amount of data compression to deliver SD pictures at 1.5-2Mbps and HDTV at 6-10Mbps. To make the compression process efficient the transmission encoder and receiver decoder are very complex devices. It is said that the AVC coder is in the region of eight times more complicated than its MPEG-2 counterpart, as very fast and powerful computation is required. AVC is not object-based but is instead designed to be used with whole pictures. In this it improves on MPEG-2 by refining existing coding systems as well as bringing new compression technologies.

A key part of AVC is intra-frame, or spatial, prediction. Also known as intra-prediction, this works within a frame where inter-prediction would not be effective. This specifically means on the I-frame. It is used on all three components within the frame – Y, Cr and Cb – and is reliant on adjacent blocks in a single frame displaying a number of similarities. Block prediction is based on using data from blocks that have been scanned before or those from the same frame.

Next Month...

This concludes the Video Guide look at broadcast transmission and compression systems.

Next month's Audio Media will have the start of a new series of Video Guides looking at specific aspects of the post-production and production processes.

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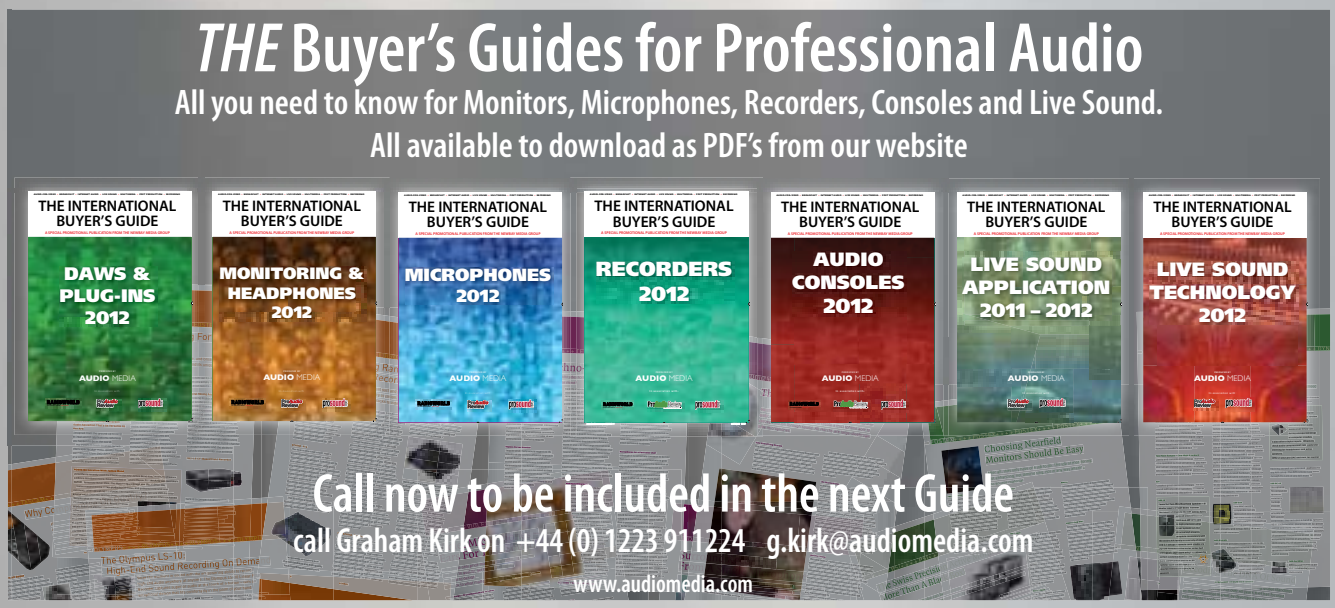
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The Fugitive

The thrills and spills come in prominently through the speakers in this all-out action thriller from 1993, says KEVIN HILTON.

THE FUGITIVE (1993) became a favourite demo film during the early days of home cinema, famed for two spectacular – but hardly subtle – audio sequences that come leaping out of the loudspeakers to be as much a part of the action as the special effects and stunt work. The question lurking at the back of the viewer's mind is: have Director Andrew Davis and Supervising Sound Editors John Leveque and Bruce Stambler played all their cards far too early?

The film is based on the hugely successful 1964-67 TV series *The Fugitive*, starring David Janssen as Richard Kimble, a doctor wrongly convicted of murdering his wife. Fortunately the train taking Kimble to prison for execution is derailed, allowing him to escape his escort, Lieutenant Philip Gerard (Barry Morse). He then searches for the real killer, a one-armed man, while Gerard pursues him relentlessly.

Harrison Ford plays Kimble in the big screen version, which throws out the *Les Miserables*-inspired picaresque structure of the TV show in favour of a conspiracy chase thriller. The Hitchcock-ian tone is set by James Newton Howard's music, which has echoes of Bernard Herrmann mixed with modern percussion and the sax of Weather Report's Wayne Shorter.

This underscores the opening sequence showing Richard and Helen Kimble at a fundraiser, punctuated by the fatal attack filmed in slow-motion black and white with slowed, echoey sound. Percussive stabs accompany the finding of Helen's body, cutting in an explosion of camera flash noise to the trial. As the circumstantial evidence and public opinion turn against Kimble the audio becomes harsher, culminating with heavy reverb on the judge's gavel banging as he passes the death sentence and the clanging left to right slide of the cell door.

All this is merely a prelude to the first set piece. Kimble is being transferred to Death Row by bus when the other prisoners on board attack a guard in a bid to escape. During the confusion the driver is shot, causing the vehicle to hurtle into the crash barrier with a grinding scrape before bursting through it and rolling down the bank in a series of jolting crunches. Momentarily there is silence as the passengers come to their senses – but a not so distant train horn signals they are still in danger.

The locomotive wheels shriek as the brakes come on but it hits the shattered bus, shunting it out of the way and derailing itself. Kimble, wearing leg shackles, shuffles quickly from the wreck as the train lumbers behind him. Everything is thrown in the mix – the sound of rending metal, debris flung around the loudspeakers, and the final explosion.

Next morning the hunt for the fugitive begins, led by Chief Deputy US Marshall Samuel Gerard (Tommy Lee Jones). Kimble, meanwhile, has changed his appearance and evaded the cops, only to be cornered by Gerard and his team in tunnels beneath a dam. Water runs down the walls as the marshalls track their quarry, while Newton Howard's score ramps up and the thunder of the cascade outside gets ever nearer.

Gerard confronts Kimble on the outside of the dam as water pours deafeningly beneath them. With nowhere to go, Kimble jumps into the watery cauldron below, brief underwater sounds telling the audience what Gerard only suspects – that he has survived the drop.

After two pummelling action sequences Davis drops the pace slightly but the audio is still prominent. Kimble sleeps fitfully, his dreams of Helen turn from gentle, happy scenes – progressing with soft whooshes – to nightmares of her death and his struggle with Sykes, the one-armed man, sequences accompanied by harsher sound effects. Sound also plays a role in convincing Gerard that Kimble has not left town; the tell-tale sounds of the L-train and station announcements on a phone tap confirming he is still in Chicago.

Kimble eventually discovers the truth and, after dealing with Sykes, confronts Dr Charles Nichols (Jeroen Krabbe), the friend who betrayed him. This key sequence is handled more subtly than what has gone before. Nichols is giving a speech at a swanky hotel. He tries to placate Kimble, their conversation still amplified by the PA. The surprised murmur of the dinner guests turns to gasps of shock as Kimble pushes Nichols' arm away and then shoves him.

The two men leave the function room and begin fighting. Their struggle moves to the roof, where a hovering police helicopter provides noisy accompaniment. Crashing through a glass roof they land in the hotel laundry. Nichols escapes from a dazed Kimble and hides among the equipment and clothes bags moving on an overhead pulley. The noise of steam and the pressing machines creates an unsettling backdrop to the cat and mouse, contrasting well with the previous sound and fury.

Kimble eventually overpowers Nichols, who had been about to shoot Gerard, with little fuss but this shift in sound design is not a damp squib. By changing gears the final confrontation and exoneration of Kimble is all the more effective.

BAFTA clearly thought so, honouring Leveque, Stambler, and their team with the Best Sound Award. More attention was on Tommy Lee Jones receiving the Best Supporting Actor Oscar for his deadpan, fast-talking turn as Gerard but, as with most action films, the acting in *The Fugitive* is not that important. It's all about the thrills and spills, many of which, in this case, come out of the loudspeakers.

"I was suspect at first, but after a few minutes with the Recoils I realized how much difference they made. They work."
~ Al Schmitt
(Barbra Streisand, Ray Charles, Quincy Jones, Madonna)

"With the Recoils I immediately noticed improvements in low end clarity – to the point that I no longer needed a sub. Incredibly, high frequency detail and image localization also improved."
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~ Elliot Scheiner
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~ Ed Cherney
(The Rolling Stones, Bonnie Raitt, Jackson Browne, Eric Clapton)

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~ Bil VornDick
(Bela Fleck, Alison Krauss)

"It really is amazing what a simple little thing like the Recoil Stabilizers can do to a system. Suddenly everything got clearer, punchier and more solid."
~ Frank Filipetti
(James Taylor, Foreigner, The Bangles, Elton John)

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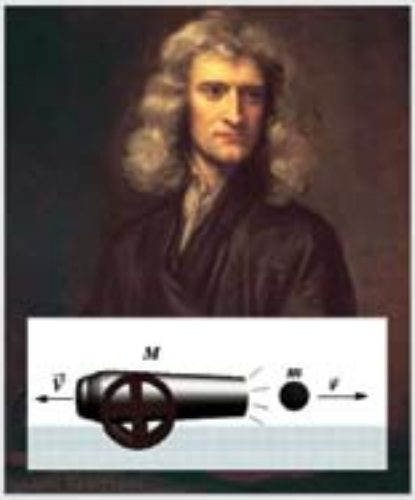
...Had Newton been an audio engineer, he would've used Recoils!



You've bought your new monitors, you put them on your desk and start to mix. However when you listen in your car or on other systems you notice that your mixes are not translating well – they don't sound the same as they did in your studio. Why?

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Some would say "just isolate the loudspeaker from the desk with a foam pad" but by doing so, you introduce a new problem—your speaker is now swaying back and forth unhindered on the foam, just as Newton said it would. Energy that could be producing a crisp kick or accurate bass is dissipated into the foam and is lost.

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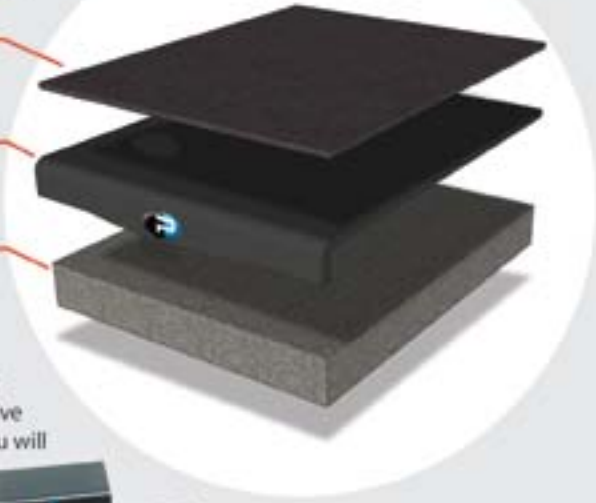

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THE INTERNATIONAL BUYER'S GUIDE

A SPECIAL PROMOTIONAL PUBLICATION FROM THE NEWBAY MEDIA GROUP

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Welcome to Microphones 2012, an International Buyer's Guide. We've scoured the ever-widening market of professional microphone products for your convenience, and thrown in a few informative and hopefully thought provoking articles from experts in the field.

Newly updated and refreshed for this year, Microphones 2012 is a collection of promotional articles looking at some of the world's leading microphone manufacturers and their products.

Inside you'll find the stories behind the gear – the ethos' and design ethics that go into producing one of the core components in professional audio – and details of the products themselves. In addition, we've collated a directory of mic manufacturers, and included three articles around the subject of microphone technology and recording technique, specifically for the audio pro.

Whatever your field of work, the quality of your product depends heavily on the quality and method of acquisition. This is why microphones are so important, and why this genre of audio gear probably generates more passion than any other. While the range of basic principles in microphone technology is relatively small, the variations on these themes are incredibly numerous – we've listed over 90 manufacturers in our directory, from all over the world, most offering choice across several transducer or electronic approaches.

You might be a film or drama location recordist, a music studio engineer, a Foley editor, a radio journalist, a member of an ENG crew, a live sound engineer – any, in fact, of the hundreds of very specialised roles that require not only a theoretical grounding in microphone technology, but also intimate knowledge of the 'art' of microphone practise, placement, and choice.

You might even just be starting to build your microphone stock and need a place to start. Are you aware of recent advances in all areas of microphone technology? Are you familiar with a handful of high-profile manufacturers, but would like a greater breadth of awareness when it comes to the 'alternatives'? Whatever your needs, *Microphones 2012* should be able to help. It should be a place to begin your search.

Microphones 2012 is a project developed by *Audio Media Worldwide* (www.audiomedia.com). *Audio Media* concerns itself with the business of production and production technology for professional creatives, operators, technicians, and engineers everywhere.

Paul Mac, Editor

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One Man's Mic List

ALISTAIR MCGHEE has a few suggestions for the staple ingredients in a wide-ranging microphone collection.

The Schoeps SuperCMIT.

When you consider long-term investments in your audio kit, microphones are probably the safest investment. Despite digital nibbling away, spending your hard-earned on some classic transducers is probably as close to money in the bank as pro audio kit gets. Your mixers and outboard, software and computers, interfaces and plugins are now subject to the laws of digital and there'll be a newer, faster, better, version for less cash as soon as you've ripped open the virgin packaging of your latest purchase.

That's not to say nothing happens in the world of microphones, far from it. In just about every area we consider, established heavy weights are under threat from punchy newcomers, and new technologies or different takes on old techniques guarantee a constant stream of interesting product. Let's start far from home, in the wilds of location recording.

On Location

Simplifying location down to the bare essentials you need two things, a mic to put on the end of a stick and some radio personals. Let's start with the mics on the end of the pole. If there can only be one and you have a mixed workload then you'll probably opt for a shotgun mic; if you want more flexibility or work mostly indoors and closer-in, hypercardoid will be your mic of first choice.

Most of the big guns start with 'S': Sennheiser, Sanken, and Schoeps.
The Sennheiser MKH 416 has been the staple of many a sound recordist's kits – since digital meant 'moving something with your finger'. The 416 sounds good on-axis, its RF technology makes it immune to damp problems, and it is more reliable than a Honda Jazz. Further up the Sennheiser food chain there's the MKH 8060, which you can get bundled with an AES 42 converter if you're lucky enough to own location kit with AES 42 inputs.

Sanken offers a line array style solution rather than an interference tube and its CS-3e garners lots of praise. You should hear it.
At the expensive end of the Schoeps range the Super CMIT 2U offers stereo, digital output, and on board DSP. At the other end of the range the CMIT 5 has a massive reputation, and is blue, which I think is definitely a plus. Directors love it.

Up in the higher-priced area you should look at the DPA 4017B, but for those of us feeling the crunch it's not all doom and gloom. Rode has been making in-roads with its NTG3, which is also an RF biased condenser that has received praise from all over; and it also has the less expensive NTG2. Check out Youtube for millions of Rode vs 416 videos.

I've used many an Audio Technica gun mic and they've always delivered. The company recently updated its range as well. And as you would expect, Shure, AKG, and beyerdynamic all have contenders. Sony does too, but somehow it manages to keep it very, very secret.

The key question for people in drama is often the quality of the 'off-axis' audio and where this is crucial many reach for a hypercardiod rather than gun mic, where the interference tube contributes to comb-filtering effects. For those on a budget an AKG Blueline with a CK-93 will get you going, a Neumann KM185 is great if you swing the boom like Len Hutton and have fairy-soft hands. Not for me then. Sennheiser has the MKH 50 and Schoeps the very highly regarded MK41 capsule wedded to a CMC 6 amp.

Back down at the more affordable end of the scale I hear good things about the Audix SCX1-HC, though I have never used one. I sometimes peruse the Gefell catalogue, it makes great mics and I bet its M210 is a peach, but I've never seen one on set.

The Rode NTG-3.

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Location – Personal

I'm old enough to remember when saying "ECM" was equivalent to saying "personal mic," such was the grip of the Sony ECM 50 on the market, at least in the broadcast sector.
Sony still has the ECM 77 and 88, but nowadays the competition is much stiffer. Martyn (the man who knows, at Soundkit) says that among the documentary guys, Trams are favourites; while the Sanken COS-11 is where the action is in much of the drama market. I like the COS-11 because, like the ECM 50, it has a great name, which I think is important. And it sounds good. But then I like the Tram's accessories, especially the windshield that looks like a mouse.
How do we decide? Fight? No – buy one of each.

As you would expect, Sennheiser has a range of personals to suit every pocket, well every biggish pocket, though they don't seem as popular as add-ons to other manufacturers' radio kit. DPA is a big player in the personal market. It makes great mics and does kits with extras for when you don't want to see the mic. Mind you, if I spend all that money on a mic I normally want everyone to see it.
Give me a huge mouse-shaped windshield with "DPA: I bought the best, so don't ask to borrow it" written on it. And while I'm on the subject, hair clips don't work for everyone – know what I'm saying?

Don't tell anyone but AKG makes some tidy personals, and if you are working in churches or other `houses of worship', my bet is you'll see a lot of Audio Technica and Trantec, though my experience of these is limited.

Live

First, buy a Shure Beta SM58, in fact, buy two. You can always stick the other one on a guitar when you want a lot of rejection (of the acoustic type).

However (whisper it not in the corridors of Shure) but AKG (D7) and Audix (OM5) make some tidy live vocal mics. There are of course other players. Neumann has the KM 104 and 105, and if you fancy bucking the trend how about a beyerdynamic ribbon mic like the TG V90r. It looks cool and has a great name – if you're in the business of naming French trains.

Sennheiser is another staple – the evolution range has vocal mics to suit everything, and churches are awash with them, the dynamic 835 being very popular. There is a version of this with a switch, which gets otherwise intelligent and capable professional sound engineers every time.

Okay, what about the rest of the stage? Shure SM57s for cabs, or AKG 414s, or both. If you can't run to a 414, how about an Audio-Technica 4040? Great name too. Overheads tend to be from the classy end of practical, on the basis that the further away the mic is from the thing you want to record the better it has to be. Again 414s are very popular here or, still from AKG, a C 430 if you are on a budget. The Neumann KM184 is a great mic and useful on all sorts of instruments.

There's a tonne of whole drum kit solutions. Audix has a very reasonably priced set, Audio Technica has something even priced even lower, and Shure and beyerdynamic have a range of options. For a much bigger investment, there's the Earthworks full drum kit set.

According to live sound lore, you will need an AKG D12 for the kick drum. I know it's vintage and acoustically a little soft, but on the other hand you get to say, "I'm rigging a D12 on the kick."

Buying a mic for the keyboards is probably a waste.

The Shure C414.

Studio

If you have a lot of money buy Neumann U87s. If you don't have a lot of money, steal some Neumann U87s. If you have lots and lots of money, buy a Telefunken (original) U47 but don't tell anyone. They will kill you, and if they don't, I will.

For the rest of us, the world is your oyster. sE Electronic mics have been making mighty big waves for the last few years and its range is incredible. From affordable mics to get you started, to ribbons at give away prices, and the very capable 4400 (guess which AKG it's competing with?). The company has tube mics, and even a ribbon with Rupert Neve inside.

Talking of AKG, its pride of place goes to the 414XLS, but the ULS series with interchangeable capsules are also top performers. At the peak, AKG's C12 VR claims to be an exact copy of a microphonic legend. Nobody gets fired for using a C12 on the vocals.

For classical stuff, omnis rule, and in the world of omnis DPA and Schoeps slug it out. Let's face it, they both make stunning mics capable of great results, but don't forget the high end of Sennheiser's MKH range, and don't forget

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The Sennheiser MKH 8040.

Earthworks; their omnis are very highly sought-after. If it's a figure-of-eight you're after, ribbons make a lot of sense. I loved the Royer 101 recently, but there's loads of choice – classics from beyerdynamic and Coles, and affordable upstarts from sE, Shure, and Audio Technica.

While back at condensers, Gefell I'm sure should be on your wish list if you have the cash. And if not, Rode has a great range.

If you're looking for an all-in-one stereo solution there are lots to choose from. For the higher end of the money scale, the Schoeps sphere is there for an all round solution, but unforgiving in bad acoustics. Otherwise, I'm going British on this: Soundfield or nothing. It's price competitive with stereo mics from the big German manufacturers, and there's even a battery powered location version.

Reporter Mics

A reporter's mic has to be durable, durable, and a bit more durable. After all, you might have to defend yourself with it. For many years beyerdynamic has been king of the hill with the MCE 58. For sheer durability the Electrovoice RE50 takes some beating, literally. You could beat an armoured personnel carrier with it and still file the report. The Sennheiser MD 46 (cardioid... or the 42 in omni-style) has higher output than the 58 and I think a nicer finish. I have found it a touch bright though.

Last year Audio Technica released the BP 4001 and 4002, reporters mics in cardioid and omni, and in my book well worth a listen. AKG has the D 230, which I haven't used much, and to my shame Shure has a whole range that I've never tried either.

Radio Studio Presenter's Mic

Electrovoice RE20 is a staple here – a seriously big mic. If you buy one of these, get some spare elastics for the suspension. This microphone will probably survive a nuclear attack. The Neumann BCM 104 is another – though a note to Neumann, please don't have mics for different things with the same numbers.

How about Neumann TLM 102s for guests? Rode has an end address broadcast mic that I haven't tried. A colleague swears by a Beta 58 for durability, and the Audio Technica 4033 or 4040 would be good choices for environments where not everyone is a clumsy idiot... If your presenter insists on working too close to the mic you might want to try a gun mic (or maybe just a gun), even though it's not an ideal application. Note that for some presenters, anywhere under 300 metres is too close to a microphone.
Try an AKG Blueline with a CK98, one of the inexpensive Rodes, or maybe a beyerdynamic 836. Talking of beyerdynamic, what about an M201? Simple black classic, but not for desks with noisy mic amps.

Headworn

One of the challenges for headworn mics is the battle between robustness, discreteness, and audio quality. It's difficult to get all three.
If you are a careful user, I'm a big fan of the audio quality of the Audio Technica AT 892 and it won't break the bank.

Heading higher up the cost ladder, DPA offers a range of solutions and has a choice of single ear attachment or, for more security, a double ear solution. Sennheiser too has some high-end solutions and a range of wireless kit to got with them. But let's not get into wireless here. I hear lots of good things about the Shure WH30XLR: it majors on ruggedness and is attractively priced.

The Rest Of The Cupboard

A lip mic: A Coles 4104. Another great name, another great product. When you need one of these, nothing else will do; and it makes radio people like me very happy to see the mic obscuring the presenter on TV. As an added bonus you can get the interns to clean the spit guard every now and then, just to see how committed they are to broadcasting.

PZM or boundary mic: Crown do these. You used to be able to get an unbalanced one at Tandy's for thirty quid. Not now, I suspect.

A Gefell KEM970 is described on the website as having 'non-rational symmetry'. More simply, it's a line-array mic that does things nothing else does; but never attempt to read the price while standing up. Gefell is promising the return of the M7 capsule in 2012 in the form of a CMV 563. I want one, you want one, we all want one. You can even buy an M7 watch to impress your friends (for only 279 Euros, a snip).

A Coles 4038: I don't want to listen to it (though it sounds pretty good even after all these years). I just want to look it, and raise a glass...

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Ten Microphone Truths

There is an infinite number of microphone tips – just ask anybody and you'll get a different answer. Here are ten truths that we're reasonably sure are good ideas. For more, see *The Manual* pdf on the *Audio Media* website.

Mic Adventures

Sometimes it is a good idea to reconsider old habits. Are they good or are they just old? Choosing the right microphones for the job sometimes needs some rethinking. Instead of picking the usual one, shake the bag and see what other possible solutions you have.
Eddy B. Brixen, Audio Specialist, DPA Microphones

The Great Fig.8

The figure-of-eight microphone pattern is great. Not only does it give you two hot sides when you need them, but the off-axis rejection is astonishing. Use figure-of-eights as drum overheads, aiming the off-axis to reject snare. Or use one as a vocal mic for the singer who wants foldback on speakers, not headphones. Point the speakers at the off-axis.
David Mathew, Audio Precision

Far Out Man

When reading the frequency response of a cardioid microphone, notice the distance at which the data has been obtained; some microphones have a flat response in the near field, others in the far field.
Eddy B. Brixen, Audio Specialist, DPA Microphones

Kick Start

Miking a kick-drum: This is often a double mic situation, one for inside to get the attack and punch, one for the outside to get body and depth. Start from the outside, and move inward. Listen while sitting in front of the kick and have the drummer step on it a few times, find a good spot, 3-8-inches away from the head and set the mic there. Go listen to this mic mixed with the overheads, listening in mono. With the phase switch on the kick mic pre-amp, find the low end loss, now move this mic forwards and backwards to find the point of maximum low end loss. Once found, flip the switch and now you are ready to move on to the inside mic. I like a Shure Beta 52. Start by moving this mic in reference to the outside kick mic, once these are locked in phase turn all the mics back on, pan your overheads and you will have a nice full, well balanced drum sound.
Mike Terry, Grammy nominated Producer, Engineer, and Sound Designer c/o Lauten Audio

Vocal Reach

Position a singer's mic slightly above but facing their mouth – this angle helps them open their throat more. Use a pop shield or get them to sing off axis so wind isn't blowing directly into the mic diaphragm.
Alan Branch, Producer/Engineer and Audio Media Contributor

Piano Glue

Add some vibe to a piano that is the featured instrument: oftentimes if there are other mics up in the studio that have been used for other things, I will quickly listen to them to see how they blend in. A mic pointing the other way from the piano that was originally set up for a snare drum and going through an 1176 is the surprising glue that can really add some vibe.
Mike Terry, Grammy nominated Producer, Engineer, and Sound Designer c/o Lauten Audio.com

Inside-out

Make sure your mic is the right way around! I got asked by a producer once who was working in a studio next door why their vocal sounded so funny, was it the room or the compression? I knew straight away when I heard it, and helped the engineer avoid embarrassment by pretending to adjust the mic, whereas in fact I just turned it round the right way.
Alan Branch, Producer/Engineer and Audio Media Contributor

Standfirst

Watch for mic stands moving or touching a drum kit, these will only ruin an otherwise great recording, and sometimes you won't get a second chance.
Alan Branch, Producer/Engineer and Audio Media Contributor

Safety Track

Record two tracks from the mic. If your pre-amp has two outs, attenuate one by about 10-15dB. That way, if you get an over on the normal one, the attenuated one will probably be fine. Some mic pre-amps' outputs can by Y'ed if they don't have two outs. Check with the manufacturer.
Joel Silverman, MD, Millennia Music & Media

Time Wise

Distance is not always a good solution for isolation. It may be counter-intuitive, but often putting the piano next to the drums, with a lot of baffling, is better than separating them by ten or fifteen feet. The bleed level may be a little less at fifteen feet (in a practical room, not as much as you might expect), but the bleed is also about a millisecond later for each foot of separation. It can be the 15 ms time delay that sounds so bad in the mix.
David Mathew, Audio Precision

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Following AKG's successful DMS700 wireless system, DMS700 V2 offers a hardware and software upgrade to devout users.

Taking another positive step towards unbelievably reliable transmission, DMS700 V2 provides a 512-bit encryption, low 3.5 latency, and the reliable DPT body back for transmission.

Improved link quality between the transmitters and receivers provides an increased working range, allowing for more freedom in arranging performances in a vast range of environments, from lecture halls and houses of worship, to live performances and broadcast applications.

At Your Fingertips

AKG's iPhone App provides users advanced control functionality, managing wireless system parameters, from the name of the set-up to the frequency signals, while possible solutions for solving signal issues are also addressed. An ALERT system automatically issues a warning with a low battery or antenna malfunction. With a Wi-Fi connection, users are connected to the AKG HUB4000 Q, which can be used side-by-side with HiQnet System Architect™ as the entire system is based on the advanced HiQnet protocol.

The application is available on the Apple iTunes store.

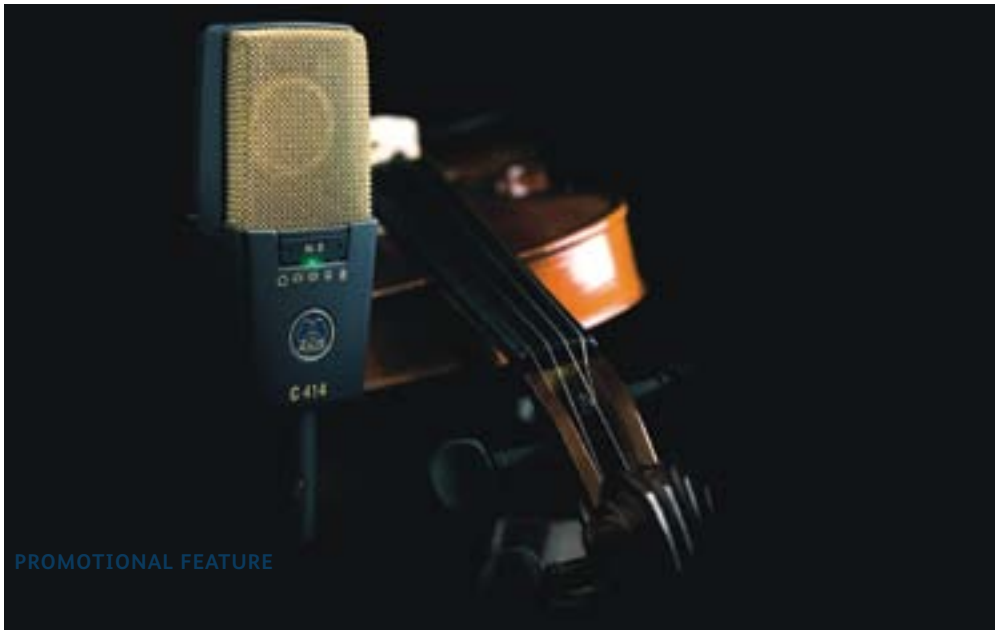
The Classics, Reborn

AKG's C414 XLII is a staple in recording studios around the globe. Channelling its sonic signature characteristics from AKG's legendary C414 B-ULS, lead vocals and solo instruments can easily be recorded and projected through dense mixes when recorded through the XLII. The C414 family has built a reputation for extraordinary sound and clarity for more than 40 years and continues to deliver artists' and producers' sounds to award-winning heights.

C414 XLII's nine selectable pickup patterns allow perfection when in use for any project. With an equivalent noise level of only 6dB-A, its state-of-the-art components ensure the shortest signal path for the ultimate sound.

AKG's C214 microphone is designed as a cost-effective alternative to the C414 line. Its sound capturing abilities run similar to the dual-sided C414, but on a one-sided capsule for cardioid pick-up pattern. C214 handles high-pressure sound, including amplified guitars, voice and orchestral instruments. The rugged design features a dynamic range of 143dB, and a low-cut switch, working on low phantom power voltages from 9 to 52V. C214's circuitry provides maximum SPL capability of 156dB with minimum noise, while its gold-plated XLR output connector manages signals without loss.

AKG's C414 XLII has recorded countless hits around the globe, as many engineers, producers and recording artists praise the hardware as their go-to mic.



Comprehensive Blue Line

AKG's Blue Line provides a family of interchangeable small diaphragm condenser microphones, which easily snap on and off for the user's sound requirements. The line's five well-balanced microphone capsules reinforce AKG's reputation for reliability and quality in the recording industry.

SE300 B is a compact module, operating from any 9 to 52V phantom power supply. Its transformer-less output ensures pristine full-range audio, while preventing low-frequency distortion. SE300 B, the powering unit for the line, houses the Blue Line attachments: CK91 offers a consistent cardioid polar pattern for applications where off-axis rejection is required. CK92's exceptionally neutral presentation of a source in its ambient sound field provides consistent results regardless of the distance between the mic and the source. With its hypercardioid polar pattern, CK93 provides greater attenuation of 120-degree off-axis sounds. CK94 provides users with a highly accurate figure-eight capsule, ideal for two sources facing one another during one session. CK98 is a short shotgun mic for noisy environments. Its smooth, wideband frequency response makes it perfect for end-of-stage and ceiling placement.

HARMAN's AKG, founded in Vienna, Austria 65 years ago has established a reputation for superior audio equipment, holding more than 1,500 patents for microphones, headphones and wireless technology.

HARMAN (www.harman.com) designs, manufactures and markets a wide range of audio and infotainment solutions for the automotive, consumer and professional markets – supported by 15 leading brands, including AKG®, Harman Kardon®, Infinity®, JBL®, Lexicon®, and Mark Levinson®. The company is admired by audiophiles across multiple generations, and supports leading professional entertainers and the venues where they perform. More than 25 million automobiles on the road today are equipped with HARMAN audio and infotainment systems. HARMAN has a workforce of about 13,000 people across the Americas, Europe and Asia, and reported net sales of $4.3 billion for the twelve months ended March 31, 2012.

AKG's Friends include: Missy Elliot, Jon Hiseman, Alejandro Sanz, Sepultura, Steve Stevens, Billy Morrisson, Rusty Anderson, Anchored, Bush, Amaral, Mary Jess, Battles, Kane, Trey Songz, Rick Latham, Steve Pageot, 2Cellos, and other international superstars.

AKG by HARMAN

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For a complete list of AKG distributors, please visit www.akg.com/distributors.

Audix –

A History of Performance, Innovation and Excellence

Audix commenced in 1984 with a mission that remains unchanged: to design, engineer, and manufacture high performing, innovative products that contribute to the advancement of the professional audio industry. Year after year Audix microphones are recognised for their innovative design, performance, quality, durability, and value. Audix is determined to push the limits of technology. From concept to completion, the on-site research and development team combined with an in-house manufacturing facility enables Audix to proudly provide products designed at the Wilsonville, Oregon headquarters. Audix continues to evolve; striving to provide products that exceed your expectations.

Audix's state-of-the-art manufacturing facility focuses on R & D, automation, and CNC machining equipment. This not only enables Audix to control the quality of the products from start to finish, it allows for continual improvements and enhancements as new materials and processes become available. While the process of capturing acoustic sound waves and converting them to electronic impulse is a very complex process, Audix always strives for the simple, most elegant solutions. This is apparent from the design and performance of products such as the OM Series, VX5, VX10, D Series, i5, SCX25A, and The Micros™.

OM SERIES –
Pioneering VLM™ Capsule Technology

In 1986, Audix designed and introduced a proprietary capsule for the OM Series utilising VLM™ (Very Low Mass) technology. The principle of the VLM™ technology is based on a very lightweight diaphragm, which allows for extremely fast, accurate processing of incoming signals. The result is clear and natural sound reproduction, extended frequency response, and high SPL (Sound Pressure Level) handling.

VLM™ technology, combined with a very tight hypercardioid polar pattern and aerodynamic body design established the OM Series as a new class of vocal microphones. The OM5, OM6, and OM7 are the vocal microphones of choice amongst sound engineers and top touring artists such as Alanis Morissette, Pearl Jam, George Strait, Red Hot Chili Peppers, Willie Nelson, Bonnie Raitt, The Doobie Brothers, Blink 182, Jimmy Eat World and Crosby, Stills & Nash; to name a few. This series continues to grow in popularity year after year and has become legendary in the industry.

VX5 and VX10 –
Achieving New Standards in Handheld Vocal Condenser Performance

Condenser microphones are somewhat challenging to use in a live stage environment. It is typical for these types of mics to be prone to feedback, due to higher sensitivity, and less capable of handling high sound pressure levels. However, many of today's jazz artists, acoustic based groups, and singer/songwriters demand studio quality sound on stage. Audix has responded to this demand with the development of two outstanding condenser microphones: the VX10 and the VX5.

The Band Pack – BP7 PRO.

The VX10 features a 21mm capsule and requires 48-52 volts phantom power for operation. Ideally suited for stages with one featured vocal artist, the VX10 will provide unmatched studio quality sound for live broadcasts and performances.

The VX5 features a 14mm capsule and switches for -10 dB pad and bass roll-off. The VX5 is an electret condenser vocal microphone requiring phantom power of 9-52 volts. Providing a very wide frequency response with rich lows and detailed highs, the VX5 will meet the most demanding requirements for a wide variety of live sound applications.

The D Series and i5 Dynamic VLM ™ Instrument Microphones – Compact Design, Powerful Performance

Dynamic VLM™ instrument microphones are chosen for live performance due to their ruggedness, utility, high SPL handling, and pattern control. The introduction of the D Series in 1993 broadened the category of dynamic instrument microphones and created new possibilities for drum and percussion applications.

Audix combined VLM™ capsule technology, transformerless design, and precision machined aluminum housings to achieve new performance standards in live sound and recording.

With the introduction of the D6 in 2002, Audix shifted the paradigm for kick drum microphones.

The tradition continues with the recent development of the i5; a well-rounded general purpose utility mic with outstanding results on snare and guitar cabs. Audix simplified the challenging task of selecting microphones to use for drum kits, percussion ensembles, piano and general studio sessions by being the first in the industry to pre-package several different configurations of microphones into "mic packs."

SCX25A – Destined to Become a Classic

In the world of studio condensers, a microphone only becomes a classic when it proves itself to be indispensable. The SCX25A is just that. SCX25A has a large diaphragm capsule housed within a unique, patented internal shock mount that is isolated within an intricate machined brass ring. This microphone has its own signature sound that delivers a pure, open-air sound with exceptional detail and realism.

The SCX25A has proven to be an outstanding microphone on piano. Because of its small footprint and acoustic behavior, it can successfully be used on a short stick or in a closed lid environment; one of the biggest challenges facing any microphone. The SCX25A is ideally suited for any acoustical application including vocals, guitar, strings, brass, overheads, woodwinds, ensembles, and room miking.

M1255B.

The Micros ™ – Pushing the Limits of Size and Performance...

Representing one the most intriguing innovations in microphone technology, The Micros™ are the world's smallest condenser microphones with integrated pre-amp and detachable cable. The Micros™ also feature studio quality sound, very low self-noise, and up to 129 dB of dynamic range. Additional characteristics of these mics include complete immunity from RF, tailored frequency response, three application specific levels of sensitivity, and a wide variety of optional clips and accessories.

Coupled with the MicroBoom™, a portable lightweight carbon fibre boom arm available in varying lengths of 24, 50, and 84 inches, The Micros™ have raised the bar when it comes to overhead choir miking applications.

The M1255B features an unprecedented output sensitivity of 32 mV/Pa and operates on a minimum phantom voltage of 18 volts. It is ideally suited for distance learning and conference systems. The most recent products developed utilising this highly sensitive capsule includes the M40 and M70 ceiling microphones, which are designed for permanent installation.

Leader of the Pack

Being the first to introduce the concept of professional microphone assortments, Audix simplified the approach to selecting microphones for drum kits, percussion ensembles, piano and general studio sessions, by offering an array of pre-packaged microphone collections. These signature 'mic packs' contain models designed to operate congruently while capturing and isolating each individual sound distinctively and naturally. All microphone packs are equipped with a variety of clips and accessories, all of which are packed securely into a handsome aluminum carrying case. The Audix microphone collections provide an extraordinary value and a lifetime of performance.

AUDIX MICROPHONES

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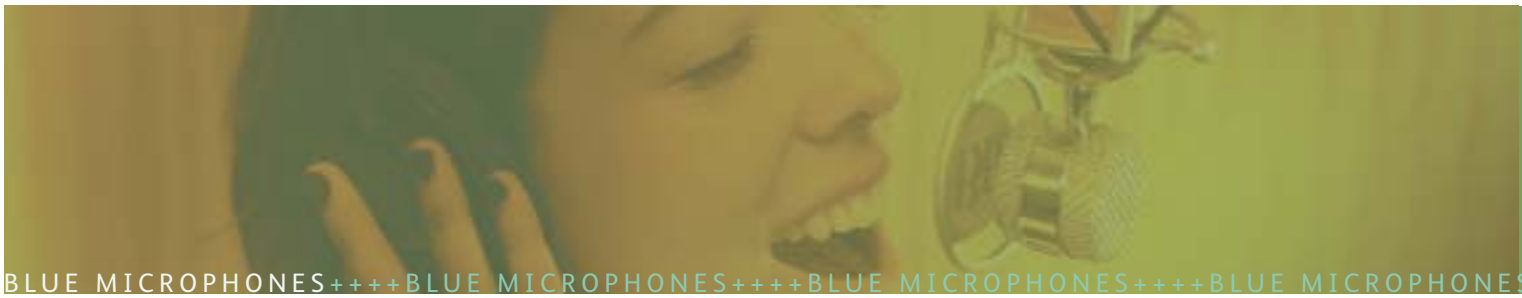

Your Microphone, Your Sound

In an age of indistinguishable mics, Blue's designs are as unique as the artists who use them. Each microphone is engineered with a unique sonic signature for specific recording needs, including new products unlike anything seen or heard before.

About Blue

Blue Microphones was founded in 1995 with the belief that technical innovation and cutting-edge design can combine to create a family of audio tools that not only look inspiring, but sound like nothing else on the planet. Building on years of repairing and improving classic Golden Age microphones, and recognising advances in digital processing (extended frequency response, dynamic range, and project recording capability), Blue fundamentally changed the way microphones are imagined, creating a line of mics with custom-designed sonic signatures that make each Blue microphone truly unique and perfectly situated to take advantage of today's increased digital bandwidths. Or to put it simply: the perfect analogue devices for the digital age.

Starting with state-of-the-art technology that ensures the purest possible signal path, along with Class A fully discrete circuitry (no ICs, pads, or filters), each microphone is designed to fill a specific role in a recordist's repertoire. Every studio series mic contains its own propriety capsule that is hand-tested and approved to capture specific sonic signatures in specific ways. The result is a portfolio of professional microphones that create a full palette of sounds, enabling artists to realise the sonic landscape of their vision.

L-R: Bottle, Bottle Rocket: Stage Two, Bottle Rocket: Stage One.

Interchangeable Capsule Series

Designed for the most discerning recordists, the Interchangeable Capsule Series contains microphones capable of providing a wide palette of tonal characteristics and pickup patterns to satisfy even the most discriminating tastes. The series integrates the best of Blue's discrete Class A circuitry with a unique and revolutionary system of interchangeable capsules that provide the engineer a wide range of potential tonal characteristics. This series is employed in the world's most respected studios, and is recognised by industry insiders as the world's premier microphone system.

Bottle

Flagship tube mic with custom transformer and interchangeable capsule system

Bottle Rocket: Stage Two

Class A discrete tube mic with interchangeable capsule system

Bottle Rocket: Stage One

Class A discrete solid state mic with interchangeable capsule system

L-R: Cactus, Kiwi, Reactor.

Multi-Pattern Series

When your recording environment requires a bit of versatility, Blue's Multi-pattern Series microphones deliver. Designed around our custom hand-tuned capsules, these uniquely designed mics offer a diverse sonic landscape, whether it's a guitar in cardioid mode, background vocals in figure-of-eight, or an orchestra in omni. Plus, if your recording application requires M/S, X/Y or a simple stereo set-up, a pair of these multi-pattern mics opens up your recording space to even more possibilities.

Cactus

Large diaphragm Class A discrete multi-pattern (9) tube mic

Kiwi

Large diaphragm transformerless solid state Class A discrete multi-pattern (9) condenser mic

Reactor

Large diaphragm multi-pattern (3) condenser mic

L-R: Mouse, Woodpecker, Blueberry, Dragonfly.

L-R: Baby Bottle, Bluebird, Spark.

L-R: en•CORE 300, en•CORE 200, en•CORE 100, en•CORE 100i.

Signature Series
Every Blue microphone in the Signature Series contains its own propriety capsule that is hand-tested to capture a specific sonic signature. Blue's philosophy is to create microphones that are unparalleled for their intended application. For example, the Mouse is a low-frequency focused microphone that specialises in capturing the bigger-than-life lows of kick drums, bass amps, and deep vocals, whereas the Dragonfly is designed specifically to capture and thicken thin sounds from soprano vocals and instruments like drum overheads.

Mouse
Large diaphragm Class A discrete cardioid condenser mic with rotating head

Woodpecker
World's first and only ribbon mic with true top end

Blueberry
Large diaphragm Class A discrete cardioid condenser mic

Dragonfly
Large diaphragm Class A discrete cardioid condenser mic with rotating head

Essential Series
Designed to be the versatile microphone every musician craves, the Essential Series is capable of capturing the essence of any audio source. From guitars, basses, and drums to woodwinds, brass, and vocals, these microphones deliver the full spectrum of audio for today's demanding digital recording environment. Whether you're just starting out and need your first great mic or you're looking for the perfect 'go-to' mic in the studio, the Essential Series mics offer the best range – and value – for your recording needs.

Baby Bottle
Large diaphragm Class A discrete cardioid condenser mic

Bluebird
Versatile large diaphragm Class A discrete cardioid condenser mic

Spark
Solid state cardioid condenser mic with Focus Control

en•CORE Performance Series
All of the knowledge, craftsmanship, and innovative technology we've poured into our high-end studio microphones has now been transferred to the stage. Designed to deliver exceptional all-around performance and capture your unique, individual sound, the en•CORE family combines style, craftsmanship, and gorgeous durable plating finishes with Blue's proprietary capsule technology. From its heavy-gauge grille and barrel to its reinforced ring and durable plated finishes, every en•CORE mic can take a beating and still deliver the performance of a lifetime, for a lifetime of performances.

en•CORE 300
Cardioid condenser performance mic

en•CORE 200
Rugged and versatile active dynamic mic

en•CORE 100
Studio-grade dynamic performance mic

en•CORE 100i
Studio-grade dynamic instrument mic

Blue For Your Digital Life
In 2005, Blue burst into the realm of consumer electronics with Snowball, the world's first professional USB mic. While Snowball was designed specifically for recording vocals, instruments, and bands directly to computer via USB, it was quickly and readily adopted by those seeking high quality audio for other applications like creating podcasts, recording voice-overs, narrating videos, capturing sound effects, and even chatting online.

Blue's audio DNA continues today with exciting innovative products like Tiki with noise-canceling and voice isolating technology to improve the intelligibility of online communication and Spark Digital, which offers a professional feature set along with the flexibility of both USB and iPad connectivity.

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Professional Microphone Solutions For Any Need

The leading Danish professional audio manufacturer, DPA Microphones, produces the best, most accurate microphones available, guaranteeing stunningly natural sound quality and zero colouration. Each microphone is handcrafted in Denmark and whatever the application, venue, or instrument, DPA can provide the optimum microphone.

d:facto™ Vocal Microphone
Bridging the gap between live performance and studio recording, d:facto offers extraordinarily natural sound, high separation, and extreme SPL handling. DPA has identified what its users love about the classic 4011 and tailored those qualities to a handheld design. The result is a supercardioid mic with superb definition that is equally at home in sound reinforcement and recording applications.

DPA d:facto™ vocal mic bridges the gap between live stage performances and studio recordings.

d:facto™ Vocal Mic
- Breathtakingly natural sound
- Excellent separation from nearby sound sources
- Three-step pop protection grid
- Extreme sound level handling

Reference Standard Microphones
The DPA family of high-end capsules is the premium choice of engineers around the globe. The reference standard microphones include the DPA sonic signature in every capsule, while offering three different choices of better sounding, noise rejecting state-of-the-art pre-amplifiers.

The modular DPA reference standard microphone series offers increased flexibility, sound quality, and cost-effectiveness.

Modular Flexibility
Any reference standard capsule can be transformed into a new configuration by combining it with one of three new pre-amplifiers, providing signal integrity, noise elimination, and even tighter specifications.

d:vote™ 4099 Live Instrument Microphones
Building on the success of the highly acclaimed 4099 instrument clip mic series, d:vote condenser mics feature supercardioid polar patterns for highly uniform off-axis frequency response and superior gain-before-feedback. Capable of handling high sound pressure levels, these microphones live up to DPA's pedigree of breathtaking clarity and richness.

d:vote™ 4099 Live Instrument Mics
- Superior gain-before-feedback
- Flexible and easy mounting
- Detachable cable
- Versatile gooseneck extender
- Wireless compatible

From piano, guitar and strings, to woodwinds, brass, and drums, DPA d:vote™ 4099 sounds equally impressive on them all.

Small footprint, big sound! DPA is without equal when it comes to the range of miniature condenser microphones.

About DPA Microphones

Drawing on more than five decades of world-class condenser microphone design, DPA has manufactured ground-breaking products in its own name since 1998. The company is represented by professional audio distributors and dealers in more than 50 countries worldwide. All DPA microphones and components are manufactured at the company's purpose-built factory in Denmark.

d:fine™ Headset Microphones

DPA headset mics are famous for staying put under the most difficult conditions as well as their clear, natural sound. Comfortable and easy to wear, DPA headset mics come in omnidirectional and directional versions, dual- or single-ear, in a choice of colours and boom lengths. It is easy to switch between right and left sides by rotating the boom and the earhooks.

Miniature Microphones

Much loved in the theatre, where they are widely used on West End, Broadway, and touring productions the world over, DPA miniatures have also found favor in broadcast and for close-miking. DPA miniatures have a neutral character, combining great detail and resolution with a rounded sound and natural response, and a range of adapters make them suitable for use with most professional wireless systems.

Miniature Microphones

- Natural, highly detailed sound
- Available in different sensitivities, cardioid and omnidirectional
- Accessory kits for stereo recording, instrument miking, electronic news gathering, film
- Wireless compatible

d:fine™ Headset Microphones

- Mic of choice for theatres and broadcasters
- Easy to adjust, extremely stable
- Natural, highly detailed sound
- Resistant to wear and tear, sweat and humidity

5100 Mobile Surround Microphone

The DPA 5100 mobile surround microphone delivers channel separation and exhibits extremely low sensitivity to wind and mechanical noise, low distortion, highly consistent low frequency, and enormous dynamic range. Its innovative design delivers a rich, smooth, and totally enveloping ambience to HDTV production, sports broadcasts, film projects, etc.

5100 Mobile Surround Mic

- Self-contained plug-and-play solution
- Compact, lightweight and portable
- Rich, smooth, fully enveloping sound
- Discrete 5.1 analogue output, no processing needed

The DPA 5100 mobile surround microphone is ideal for HDTV production, with no additional signal processing required.

DPA d:fine™ headset mics deliver the ultimate in high-SPL, distortion-free sound allowing vocalists to focus on their performance.

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MicW i-Series

The 'Cool Stuff' Award Winner

The i-Series Professional Microphones are designed especially for iOS devices like the iPad, iPhone, and iPod Touch, but can also be used in other mobile devices or as part of a camera.

The i-Series line offers outstanding performance for audio measurement, recording, and broadcast use. MicW is leading the industry in developing, manufacturing, and marketing professional mini microphones at this level of performance.

MicW i Series Professional Microphones received the 'Cool Stuff' Award from Radio World Newspaper at the NAB 2012 in Las Vegas.

Main Features

- Professional: Uniquely designed recording and measurement microphones in sturdy metal housings.
- Plug and Play: No need for additional power, just plug a mic in the earphone socket and it's ready to perform.
- Available as a Class 2 measurement mic: Convert your mobile device into an audio measurement tool.
- Superior EMI protection: Specially designed to reduce Electro-Magnetic Interface (EMI) from mobile phones.

Example Applications

- Real time analyser for SPL and FFT used for concerts, events, home, and industry measurement and recording.
- General recording for voice and instruments, interviews, conference meetings, and rehearsals.
- High sensitivity recording for ENG, voice and instruments, broadcasting, and other dedicated sound recording.

Models

- i436 professional Class 2 microphone for measurement and recording

- i456 cardioid microphone for general purpose recording

- i266 high sensitivity cardioid microphone for high quality recording

- i825 and i855 microphones for convenient interview recording, HD video productions, ENG, and more.

- iShotgun810 (pending), a special designed supper cardioid shotgun for Smartphones (such as iPhones) and DSLR cameras. It is a perfect choice for capturing an interview, from a certain distance i.e., on ENG, podcast, and video productions.

About MicW

MicW Audio is the recording microphone subsidiary of Beijing-based BSWA Technology Ltd, which has been manufacturing precision test and measurement microphones for over 14 years. MicW Audio offers six ranges of mics for recording, broadcasting, live performance, and mobile applications. Besides the i-Series, the professional Series includes L-Series lavalier microphones, M-Series measurement microphones, N-Series nickel diaphragm high performance microphones, and T-Series titanium diaphragm large diameter microphones.

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The Finest Hand-Crafted Microphones Since 1947

Backed by a proud history of scientific research, inspired design and a commitment to excellence, Nevaton offers a broad range of innovative microphones for studio, broadcast, film, and live sound applications.

History

Nevaton is a Russian microphone manufacturer dating back to 1947, when an acoustic laboratory was established by the Leningrad Optical and Mechanical Association (LOMO). This laboratory researched and designed microphones for the Soviet film, broadcast and defense industries, including the renowned LOMO 19A19. In 1991, a new company emerged out of these structures – Nevaton LTD Enterprise, founded entirely by former LOMO engineers.

St. Petersburg is Nevaton's home base, its name originating from the Neva River that runs through the city. The plant contains an acoustic laboratory, including one of Europe's finest anechoic and reverberation chambers. Microphone components, such as brass housings, capsules, and even XLR connectors, are all made in-house to meticulous standards. All capsule components undergo an artificial aging process to guarantee long-term performance. Each microphone is hand-assembled, individually tuned, and then rigorously tested and measured, in a process requiring nearly two months.

Stereo Microphones

Nevaton's innovative stereo microphone line includes the MC47, MC48, and MC404. Both the MC47 and MC48, are equipped with two large 25mm diaphragms, placed one above the other, and can be simultaneously rotated for stereo pick-up. The MC47 provides a capturing angle from 0° to 90° and the MC48 offers a range of 50° to 140°. The ultra-thin, gold-coated diaphragms are made of three micron polyethylene-terephtalate film for fast transient response and transparent sound up to 135dB. They are rated at 12dBA self-noise.

The MC404 features a 28 mm dual back-to-back diaphragm symmetrical transducer, with a fixed width of 180°. The MC404 delivers an incredible stereo image and can be used as an advanced multi-pattern microphone in mono mode.

Small Diaphragm Microphones

The Nevaton MC49 is a top-quality, small-diaphragm microphone. It is an ideal choice to record a wide range of instruments and it excels when used to record full orchestras, chamber ensembles, and string quartets. Both cardioid and omni versions of the Nevaton MC49s are used in major studios and concert halls around the world, including the St. Petersburg Philharmonic. It is considered to be one of the best naturally sounding small-diaphragm microphones manufactured today.

Multi-Pattern Microphones

Nevaton offers multi-pattern microphones available in two sizes. The MC51 utilises dual diaphragms of 24mm, and the MC416 uses a 33mm capsule. Both units are transformerless designs, with a switchable 10dB pre-attenuator, and handle extremely high SPL levels of 150 dB with very low distortion. They have four directional pattern settings, (wide cardioid, cardioid, omni, and figure-8) and are well suited for broadcasting and studio sound production.

Large Diaphragm Microphones

The MC420 produces a natural, warm, and clean sound using a 24mm diaphragm. It is a fabulous microphone for vocals and acoustic instruments. The MC440 utilises a 33mm diaphragm and is a top-notch studio vocal and broadcast microphone with a more 'vintage' response. Available in cardioid and omni versions, both microphones have elastically mounted internal dampers, giving the MC420 and MC440 additional vibration and noise handling capability. To ensure the best sound reproduction, no low-cut filters or pads used in the circuitry.

Nevaton's product catalogue also includes the MC403 vibration-proof boundary microphone, the MC401 super-cardioid shotgun microphone, as well as the highly regarded MCE400 miniature microphone used for acoustic instruments, stage and film dialogue, and lavalier applications.

NEVATON

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Swedish rockers The Hives show their love for RØDE.

That's The RØDE Difference.

Founded at a time when the only recording solutions available were either incredibly expensive or poor quality, RØDE set out to change the status quo. Twenty years on and still based in Sydney, RØDE continues to manufacture some of the world's very best microphones, regardless of price.

Precision Makes The RØDE Difference

A handful of grey-haired, highly-trained engineers in pristine lab coats, tirelessly hand-crafting every microphone in between quiet cups of tea. While some companies would have you believe that this is how they 'hand make' microphones, the reality isn't nearly as glamorous. Instead, 'hand-made' usually means 'assembled by poorly paid and generally unskilled process workers'.

And now The RØDE Difference. First: one of our core principles is to always be a technology leader, which means using the most advanced machinery to build our high quality products. Our continual pursuit of excellence through innovation results in products that last a lifetime. These are concepts that other manufacturers simply cannot achieve using primitive manual processes.

There are very few premium manufacturers in Europe and the USA who understand this, and they generally outsource these components of manufacturing, making their products even more expensive.

Which leads to the second facet of RØDE's precision difference: having the technology in-house dramatically lowers our cost without sacrificing quality. Our state-of-the-art manufacturing plant in Sydney Australia, is a unique combination of specially commissioned machinery that may have otherwise found a home in a leading German automotive manufacturer or one of Switzerland's finest watchmakers. We've adapted this technology to sculpt the best raw materials into the world's best microphones. *That's the RØDE Difference.*

Passion Makes The RØDE Difference

Here at RØDE we recognise that to make the very best microphones you need to live and breathe audio, and this shared creative vision drives our team every day.

Peter Freedman, RØDE's founder and company President: "Growing up I was always around sound and my earliest memories are being surrounded by recording and audio equipment, as well as live performances in the early 1960s. We have some very clever people here at RØDE, but what we really look for in our employees is passion. I'd rather have someone working for us who sees a career in audio as their dream, who comes to work every day seeing it as an opportunity to do something great, and empower millions of like-minded creative people."

The working environment at RØDE is quite different to what you'd expect of a company of our size and international reputation. Rather than wearing uniforms and sitting in generic cubicles while we work, we maintain a casual, social atmosphere that fosters the creativity that drives us.

Our Product Development team interacts with world-renowned musicians, engineers, producers, and filmmakers on a daily basis, ensuring that the products we bring to market are the very best they can be. *That's the RØDE Difference.*

Community Makes The RØDE Difference

The RØDE family consists of over 10,000 online artists (and counting!) performing over 100,000 tracks that easily combine to over 100 million online views!

RØDE Founder Peter Freedman at the RØDE Manufacturing Plant in Sydney, Australia.

Many YouTube 'superstars' have used our microphones since the start of their careers, and their success has inspired countless others to trust their vocal and instrumental talents to our microphones.

Millions of creative experiences all joined by a common thread – RØDE Microphones. *That's the RØDE Difference.*

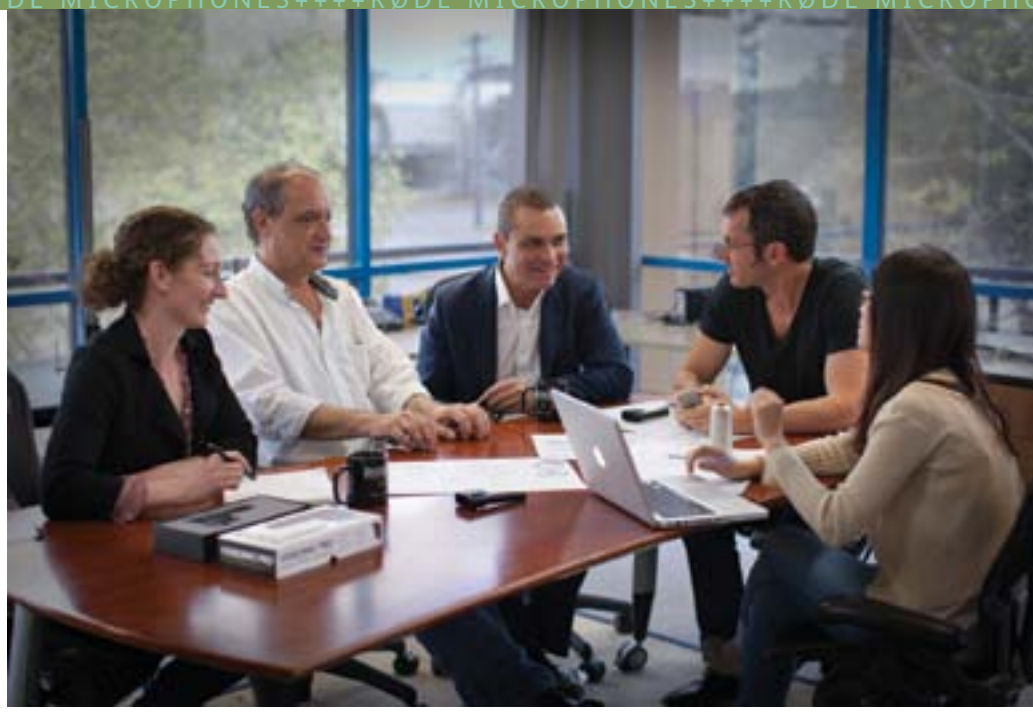
Value Makes The RØDE Difference

We're the good guys, leveraging our investments in manufacturing and economies of scale to bring you mics that perform better than those at several times the price. We bring our products to the market in both an ethical and environmentally conscious way.

RØDE was conceived as a brand that would make high quality recording equipment accessible to more than just 'the chosen few'. It doesn't just make us feel good, it's good business sense. This kind of focus doesn't just happen though – it required a huge investment and a lot of risk for the company in its formative years. Another reason why RØDE isn't just another cookie-cutter manufacturer. *That's the RØDE Difference.*

Support Makes The RØDE Difference

We realise that a company lives and dies by its commitment to customers. That's why we're proud to offer the industry's very best customer support and product warranties.



RØDE's new design studio, RØDEWORKS, opened earlier this year in the centre of Sydney.

We are the only microphone manufacturer to offer a five to 10 year warranty across our entire range of microphones. This level of confidence pleasantly surprises many customers, but for us it's simply a reflection of the quality of our design and manufacturing. We know we can offer a 10 year warranty because we are confident that our microphones will last a lifetime, thanks to the meticulous manufacturing process that only RØDE employs. You won't find any bad solders caused by an overworked, underpaid plant worker on our products!

When you buy a RØDE microphone you are also buying our product service guarantee – our customer support teams are available around the clock to provide insight on pre-sales questions, technical support on product issues, and even general recording advice.

Peace of mind that your investment is protected by a skilled team of customer service professionals for many years to come. *That's the RØDE Difference.*

After a chance meeting at a NAMM show way back in the 90s, London-based Source Distribution has been the exclusive UK distributor of RØDE products almost from day one, so has witnessed the meteoric rise of the brand from its genesis through to its current position at the very top of the microphone tree.

Source's Marketing Co-ordinator Alex Theakston explains: "Every year RØDE continues to be our biggest selling brand, and has proved to be absolutely recession-proof, primarily because it represents such extraordinary value for money and offers something compelling for every sector of the market – whether it's music recording, broadcast, live sound, or the growing consumer DSLR market. RØDE just has that happy knack of identifying a product that customers genuinely need – and then building it at a price that the competition doesn't seem to be able to get anywhere near."

Source sees 'the RØDE Difference' as embodying what makes RØDE special and feels it goes a long way to explaining not only how the company hits the price points it does, but also how it achieves such consistency in performance and such outstanding reliability. Theakston comments "The beauty of RØDE's commitment to large scale automation and quality control in their manufacturing is that we know that a RØDE microphone landing in our warehouse this month will perform absolutely identically to the same mic that arrived here last month – or even last year. That consistency gives us – and the customer - total confidence in RØDE products."

RØDE MICROPHONES

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Sennheiser –
The Audio Specialists

For more than sixty years, the name Sennheiser has been synonymous with state-of-the-art microphones. Bands, artists, live sound engineers, recording engineers and amateurs, broadcast professionals and film crews worldwide rely on Sennheiser microphones.

History

Lab W

Sennheiser was founded in the summer of 1945 as 'Laboratorium Wennebostel' or 'Labor W' (Lab W) for short, named after the tiny village of Wennebostel. Founder Prof. Dr. Fritz Sennheiser, at the time Deputy Head of the Institute for Radio Frequency Engineering and Electroacoustics at Hanover Technical University, turned the relocated university lab into a small company and started manufacturing measuring devices. Two years later, he and his engineers unveiled their very first microphone design, the MD 2 – and were soon to become experts in many fields of audio recording and reproduction. Early product highlights included amplifiers, microphone transformers, magnetic miniature headphone capsules, and microphones such as the MD 3 'invisible' mic (1949), the MD 82 shotgun microphone (1956), and Sennheiser's first wireless microphone (1957), which opened up a field in which the company was to excel in the future. In 1958, Lab W was renamed 'Sennheiser electronic', as the company had long since ceased being just a small laboratory.

Sennheiser

Innovations continued under the Sennheiser brand name. The company developed condenser microphones that operated according to the RF principle, and the first professional condenser clip-on microphone, the MK 12. The world's first open headphones were developed at Sennheiser (1968), and the company led the innovation for infrared sound transmission in the seventies. The launch of the radio microphone classic SKM 4031-TV in 1982 laid the foundation for the success of Sennheiser wireless systems in the following years, and was followed by the development of ever-smaller clip-on microphones. 1993 saw the launch of another radio microphone classic, the SKM 5000. In 1987, Sennheiser was awarded the Scientific and Engineering Award for the MKH 816 shotgun microphone, and an Emmy Award for pioneering developments in RF wireless technology in 1996. In 1998, the evolution microphone series was launched, followed by evolution wireless in 1999, Sennheiser's most successful RF wireless series to date. In 2000, Sennheiser introduced the first studio microphone to fully utilise the wider frequency range of the new digital audio formats, the MKH 800. 2002 saw the glamorous combination of the SKM 5000 N with a Neumann capsule. In 2007, Sennheiser launched its new MKH 8000 Series. 2009 saw the launch of the wireless 2000 Series and of the third generation of evolution wireless systems.

From 1988, the company had begun founding its own sales subsidiaries to further increase proximity to its customers. Today, the Sennheiser network is comprised of subsidiaries in France, Great Britain, Belgium, the Netherlands, Germany, Denmark (Nordic), Russia, Hong Kong, India, Singapore, Japan, China, Canada, Mexico, and the USA, as well as long-term trading partners in many other countries. The Sennheiser Group has manufacturing plants in Germany, Ireland, and the USA.

The late company founder Prof. Dr. Fritz Sennheiser and his son Prof. Dr. Jörg Sennheiser, Chairman of the Supervisory Board.
(PHOTO: PETRA SCHRAMBÖHMER)

The Microphone Portfolio

evolution Microphones

The evolution series of microphones provides a complete microphone set-up for vocals and the entire backline. It comprises 600 Series instrument microphones, 800 Series vocal microphones, and the top-of-the-range 900 Series of vocal and instrument mics, with such acclaimed models as the e 935 dynamic vocal mic and the e 965 large-diaphragm, true condenser vocal microphone.

evolution wireless is Sennheiser's most successful RF wireless series.

The MD Range of Dynamic Microphones

Sennheiser's rugged, easy-to-use dynamic microphones include all-time classics as the MD 21, MD 421, and MD 441, but also reporters' microphones like the MD 42 and MD 46.

Permanently Polarised Condenser Microphones

Everything from professional subminiature clip-on microphones for use with Sennheiser's wireless technology to headset microphones and small camcorder microphones. Among the classics are the legendary MKE 2 clip-on, and the K6 Series, where the user can tailor the microphone to the recording situation by adding microphone heads of varying directivity to the basic power module. The portfolio also comprises the award-winning HSP 2 and HSP 4 headset microphones, the MKE 400 camcorder microphone, and Sennheiser's smallest clip-on, the MKE 1. The latest additions are the single-sided Earset 1 and Earset 4 mics for stage and broadcast use.

True Condenser Microphones

With the MK 4, Sennheiser has launched an extraordinary studio microphone whose shock-mounted capsule is based on that of the e 965. The affordable side-address mic has a warm and direct sound, ideal for vocals and speech but also for guitars, guitar amps, string, and wind instruments, as well as drums and percussion.

MKH Microphones

The choice for recording, broadcast, and filming specialists, Sennheiser's MKH microphones are a sophisticated class of condenser microphones, operating according to the RF principle and using a unique symmetrical push-pull transducer. They offer an unchanging acoustic impedance, extremely low distortion figures, a higher capsule output with much lower noise, and thus a very clear signal. They are uniquely insensitive to unfavourable climatic conditions, have a wide dynamic range and an excellent low frequency response even with small capsules. Although their capsule is grounded, they possess a genuine fully floating, balanced output without the need to use a transformer. The line comprises the MKH 8020 (omni), MKH 8040 (cardioid), MKH 8050 (super-cardioid), the new MKH 8060 (short gun) and MKH 8070 (long gun), as well as the MKH 800 Twin, a double-capsule microphone whose pick-up pattern can be remotely controlled at the mixing desk and modified during post-production.

The MKH 8000 Series can be used in analogue and digital environments, simply by exchanging a mic module.

Wireless Microphone Systems

Thanks to the outstanding RF properties of Sennheiser's wireless technology, sound engineers were able to create systems with more than 140 microphone channels operating simultaneously. The top-of-the-range 3000 and 5000 Series include such industry standards as the SKM 5200-II handheld and SK 5212-II bodypack transmitters, as well as the EM 3732-II twin receiver. As the entry line to the professional segment, the 2000 Series offers Sennheiser's renowned audio and RF quality at a very attractive price point.

For more than one million users worldwide, evolution wireless is their no.1 choice for stage and live use. Whether wireless instrument transmitters or acclaimed vocal mics – this series contains wireless solutions for almost every application. Great sound, quality workmanship, and exciting extras for up-and-coming bands, established performers, presenters, musicians, reporting teams, and PA companies.

Digital Microphones…

…are a sound investment in the future of audio. Simply by adding a digital module, the renowned MKH 8000 series can be turned into digital microphones. Perfectly matched to the MKH microphone heads, the MZD 8000 digital module directly 'translates' the clear, warm, and responsive sound of the microphones into the digital world, avoiding the losses or signal disruptions to which cables are prone. The microphones can be remotely controlled, allowing parameter settings such as the low-cut filter and attenuation to be adjusted via a suitable mixing desk, a portable AES 42 interface, or a standard AES 42 interface and a PC.

SENNHEISER

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A complete list of Sennheiser subsidiaries and partners around the globe can be found at **www.sennheiser.com.**

Quality & Innovation

Schoeps is a name that brings visions of detail, technical superiority, pristine recordings, and a commitment to its customers that is second to none. What makes a company like Schoeps tick?

Schoeps has been innovating in the field of microphones for over sixty years. It started out in around 1948 by serving the recording and PA markets. As well as a prototype tube microphone, tape recorders were amongst the early products. By 1949 the first Schoeps condenser microphone came into existence – the CMV 50/2, with bayonet coupled capsules. In 1951, possibly the most iconic Schoeps, the CM 51/3 was released, its smaller dimensions made possible by a new tube – the Telefunken EF 94. Schoeps tube mics continued to improve and get smaller, until the CMT 200 – the world's first phantom powered microphone. Fast forward to 1973, and the launch of the Colette range of microphones and pre-amps – a modular system that continues to be updated and augmented to this day. Schoeps microphones are some of the most respected devices available to the professional audio engineer.

Here are a few highlights...

The SuperCMIT is a big step forward for the digital microphone – two capsules combine with DSP to create a super-shotgun.

SuperCMIT

The SuperCMIT redefined the directional microphone when it was launched in 2010, and is enjoying enormous success in all its applications. Unlike other digital microphones, the SuperCMIT actually uses two capsules and DSP inside the unit. This enables a higher order of directivity across a wider frequency range than conventional shotguns without a change in sound colour. The higher suppression of unwanted noise is highly desired in film and documentary, sports and theatre.

The SuperCMIT has been winning awards and accolades since its launch, including the 7th Annual Cinema Audio Society Technical Achievement Award for Production.

CMIT 5 U

The other shotgun in the Schoeps catalogue is the all-analogue CMIT 5. Otherwise known as 'The Blue', this mic has become well known for an incredibly smooth-sounding directionality and a balanced sonic character. Because of this, as well as being ideal for all of the traditional shotgun applications, the CMIT 5 also finds itself relied upon for critical music recording applications.

Colette Series

The Colette series has been the flagship modular microphone range for Schoeps for over 35 years, and the company continues to innovate and add to the range. For example the digital module, the CMD 2, has made a big impact in the digital microphone market. And there's also the MK 22 capsule with the new 'Open Cardioid' polar pattern. Now there are more than 20 capsule types and six amplifier types in the Colette range.

The Schoeps Colette MK 22.

CCM Series

The CCM Series of microphones is just as capable as the Colette range, but in this case it's not a modular series. It appeals to customers who want exceptional quality in a small size, making it ideal for intricate positions, surround arrays, conference pick-up, and so on.

CM 51/3

The CM 51/3 has become one of the most iconic images for Schoeps microphones, and still plucks at the heart strings of many veteran audio pros. The mic was introduced in 1951, after innovations in tube design allowed Schoeps to reduce the size of the body to an amazingly slim 35mm in diameter and 240mm in length.

Berlin Philharmonic

SCHOEPS is first choice for the Berlin Philharmonics

Recently, Schoeps has delivered more than 35 microphones to the Philharmonie in Berlin, home of the famed Berlin Philharmonic. These microphones completely replace the ones previously used in the main auditorium. Both the Great Hall and the Chamber Music Hall are now fully equipped with hanging microphones from Schoeps. The microphones chosen are CCM 2S omnis (to be used as main microphones in A/B pairs), plus CCM 4 cardioids, CCM 41 supercardioids, and CCM 21 wide cardioids. Furthermore, Schoeps RC tubes will be used for mobile spot microphones on stands.

The close collaboration of Schoeps with the Berlin Philharmonic has resulted in a number of new developments. The tiny gooseneck element S 170 L – used for orientating the hanging microphones – is now a standard part of the Schoeps catalogue. Special cable clamps were also developed for orientating the microphones by means of nylon strings. Klaus-Peter Gross, Chief Sound Engineer of the Berlin Philharmonic, points out: "The Schoeps mics offer us more possibilities; they sound good and they look very good."

With this investment the Berlin Philharmonic is equipping its unique Digital Concert Hall, the virtual concert venue of the Berlin Philharmonic on the Internet. Here you can experience the orchestra performing live at the Philharmonie in more than 30 broadcasts every year. A few days after each broadcast, a recording of the concert is made available for viewing in the archive. Six remote-controlled HD cameras have been installed in the Philharmonie which, along with excellent audio technology, ensure that the experience is as authentic as it is thrilling.

Stereo Recording

Schoeps has a large selection of microphones and accessories for M/S, X/Y, Blumlein, ORTF, and A/B stereo recording, which allows the user to find the right setup for any stereo recording situation. Its M/S solutions are particularly respected, as are its stereo microphones such as the MSTC 64 U for ORFT recording or the CMXY 4V for X/Y. The recently introduced stereo sets are particularly successful. Schoeps stereo setups are a standard in music, film, and sports recording.

Schoeps is committed to a comprehensive range of multi-channel arrays for every eventuality.

Multi-Channel Arrays

Schoeps offers a wide selection of practical multi-channel arrays and arrangements for the professional recordist including the Double M/S, ORTF Surround, IRT Cross, and OCT Surround systems. Due to this large variety, any application can be optimally targeted. The Schoeps engineers share their experience and competence for any music, film, documentary, sports, ambience, or live application and help to find the proper setup.

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Microphone Manufacturers Directory

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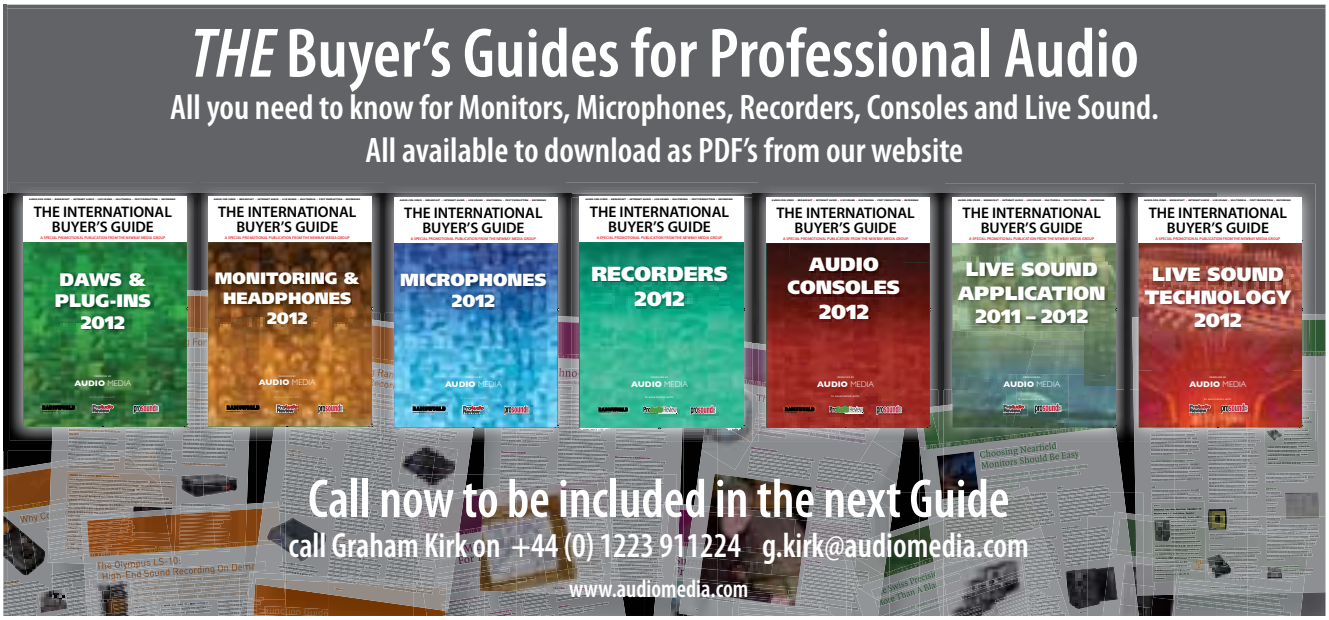
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Microphone Basics

The foundation of good microphone practice is technical knowledge. Blažo Guzina provides a run-down of the basics for anybody just getting to grips with the wibbly bits...

Microphones have different overall physical and electrical characteristics and are classifiable into three main groups, based on the physical principle of converting sound into an electrical signal: electrodynamic coil, electrodynamic ribbon, and electrostatic (or condenser) microphones.

Dynamic Microphone

The electrodynamic moving-coil microphone has a coil of finely wrapped wire precisely suspended between the poles of a magnet and attached to a diaphragm. Soundwaves drive the diaphragm, which vibrates in a high-level magnetic field. In the coil, this movement induces a voltage, which corresponds to the sound pressure.

Dynamic microphones are very rugged and handle high sound pressures without overloading. They are reliable and virtually never distort the sound signal. They are insensitive to extreme heat, cold, and high air humidity. Dynamic microphones can usually withstand extreme environmental conditions such as temperatures from -25°C to +70°C.

Ribbon Microphone

The electrodynamic ribbon mic has a thin metal foil in the form of a corrugated ribbon suspended in a magnetic field. Sound pressure variations displace the diaphragm, in which an electrical current is induced depending on the amplitude and frequency of sound. Due to the short length of the ribbon compared to the moving coil, its output electrical impedance is less than 1 Ω. This resistance is too low to directly connect to the microphone input of a mixing desk or recorder, so a step-up transformer is needed to increase the impedance up to the 150Ω to 600Ω range.

Due to constructional improvements, modern ribbon mics are suitable for outdoor and handheld use. They are prized for their warm, smooth, yet delicate sound quality.

Condenser Microphone

The electrostatic (condenser) microphone uses a transducer element consisting of a vibrating diaphragm (very thin foil) and a fixed metal plate (back electrode).

These two electrodes make up a condenser (capacitor) charged by an externally applied voltage (polarization voltage) or carrying its own permanent electrical charge, as with an electret microphone.

When soundwaves vibrate the diaphragm, the capacitance of the condenser changes simultaneously, thus producing an output voltage that varies with the intensity and frequency of the sound.

Condenser microphones usually have a flat frequency response, high sensitivity and good ability to follow sudden, percussive sound events immediately. This is described as good transient response.

Condenser microphones require an impedance converter in the form of a preamplifier to match the very high output impedance to low impedance microphone inputs. This amplifier fits within the body of the microphone in order to prevent hum, noise pickup and the losses of the signal level due to the length of the circuit from the diaphragm to the amplifier.

Phantom Power

Condenser microphones need a DC supply voltage. Except for battery operated microphones, the voltage usually comes through the microphone cable. The positive (+) side of a DC voltage connects to both signal wires of
a balanced line and the negative (ñ) side to the cable screen.

An exception is the electret condenser microphone. This type of microphone has the polarizing charge stored permanently within the diaphragm or on the backplate. No external power is required to charge the diaphragm.

Polar Patterns

Apart from the basic differences in the physical principle of operation, the main factor that influences the choice of a microphone is its polar pattern.

Polar pattern, also known also as polar response, is a chart that graphically represents microphone sensitivity with respect to the direction of soundwaves arriving at its membrane.

A chart is usually plotted in the form of a 360° polar diagram, with the on-axis 0° direction clearly marked. It is possible to classify microphones into two main groups, based on their directional characteristics: non-directional and directional microphones.

In principle, a non-directional microphone is a pressure-operated electroacoustic transducer. Its response to acoustic sound pressure is omnidirectional, meaning that the diaphragm reacts equally to all soundwaves arriving at its surface, regardless of their direction.

A typical example of a directional microphone is a pressure-gradient transducer. This type has a bidirectional (or figure-of-eight) polar diagram. This means the microphone reacts to differences in pressure between the two sides of a diaphragm.

Ribbon microphones are the most common type with a bidirectional polar response. A metal ribbon diaphragm is equally sensitive to soundwaves arriving from front and rear axes.

All other known directional patterns are obtainable as a result of a combination of the aforementioned two main polar pattern types. The number of variations is practically unlimited.

When the outputs of an omnidirectional (pressure) and bidirectional (pressure-gradient) pickup pattern are combined, the best known resulting polar responses that are obtainable are cardioid, supercardioid, and hypercardioid. Their common name is unidirectional microphones.

A unidirectional microphone is most sensitive to soundwaves arriving from one direction, in front of the microphone, but softens sounds from the sides or rear.

The cardioid microphone is sensitive to sounds from a broad angle in front of the microphone. Generally, it is about 6dB less sensitive at the sides, at 90° and 270°, and 15 to 25dB less sensitive to the rear.

Rycote® InVision™ Studio Kit

A Truly *Universal* Vocal Mic Suspension & Pop Filter System

- Fits virtually all large-diaphragm mics
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- Reduces vocal pops and thumps by up to 20dB — with no HF loss!
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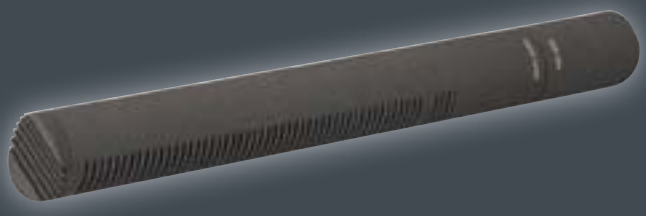

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